REPORT RESUMES

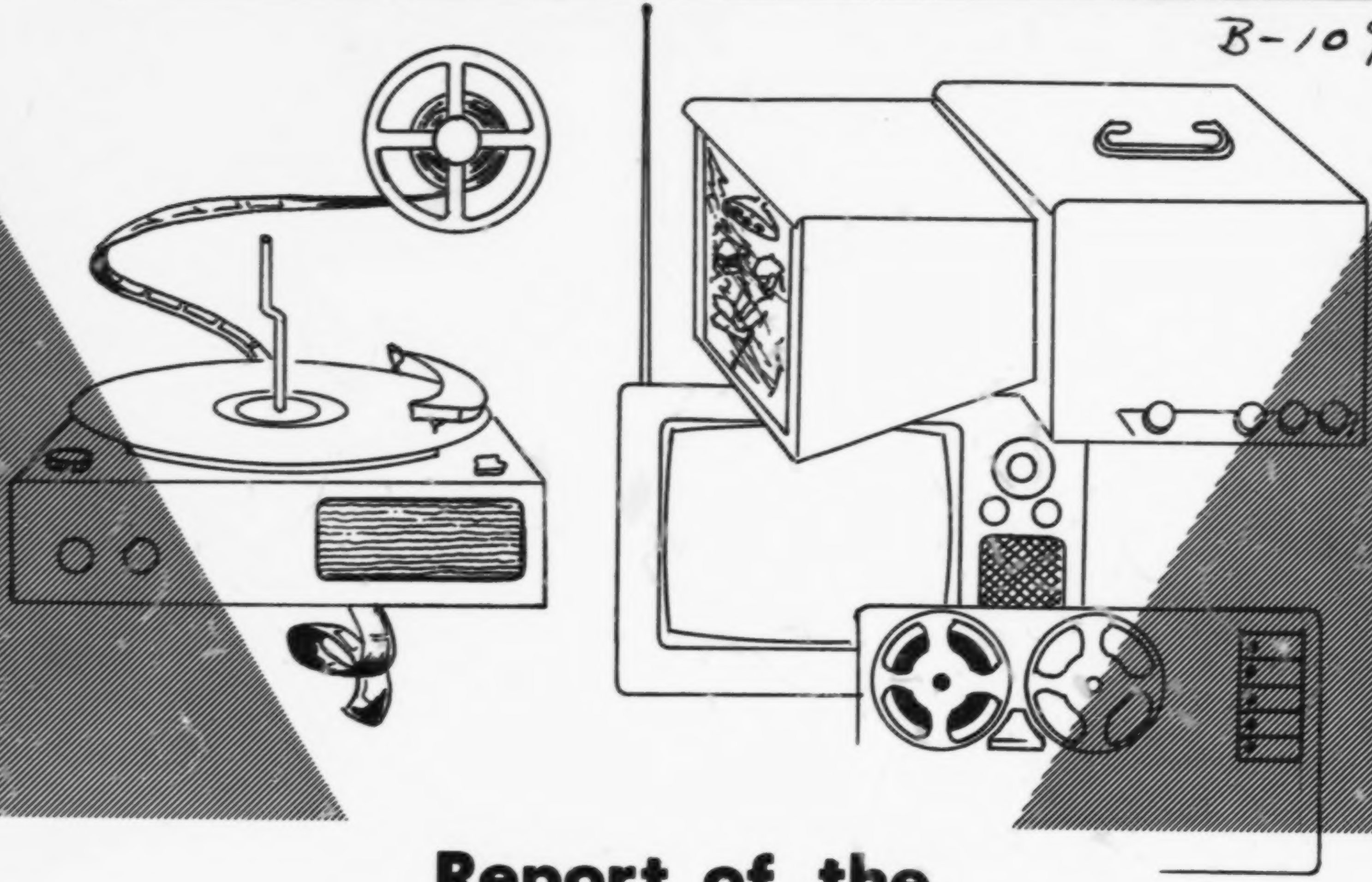
ED 003 768 64
APPLICATION OF NEWER COMMUNICATION MEDIA IN CORRESPONDENCE STUDY.
BY- MCDONALD, L.E.
TEXAS UNIV., AUSTIN
REPORT NUMBER NDEA-VIIB-109 PUB DATE 62
EDRS PRICE MF-$0.18 HC-$3.72 93P.

DESCRIPTORS- *CONFERENCES, AUDIOVISUAL INSTRUCTION, *CORRESPONDENCE COURSES, PROGRAMED INSTRUCTION, AUSTIN, TEXAS

THIS PROJECT REPORTED THE PROCEEDINGS OF A CONFERENCE HELD (1) TO DEVELOP A GUIDE FOR THE USE OF AVAILABLE AUDIOVISUAL MEDIA IN CORRESPONDENCE STUDY AND (2) TO SET GUIDELINES AND SPECIFIC PROJECTS FOR FUTURE STUDY AND RESEARCH IN THE USE OF THE NEWER COMMUNICATION MEDIA IN CORRESPONDENCE STUDY. (GD)

ED003768

B-109



Report of the CONFERENCE on NEWER MEDIA in CORRESPONDENCE STUDY

Prepared at The University of Texas in cooperation with the
U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE, Office of Education

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
Office of Education
This document has been reproduced exactly as received from the person or organization originating it. Points of view or opinions stated do not necessarily represent official Office of Education position or policy.

Division of Extension
The University of Texas
Austin 12, Texas

Application of

NEWER COMMUNICATION MEDIA IN CORRESPONDENCE STUDY

A Report of a Conference held in Austin, Texas to (1) Develop a Guide for the Use of Available Audio-Visual Media in Correspondence Study, and (2) Set Guide Lines and Specific Projects for Future Study and Research in the Use of the Newer Communication Media in Correspondence Study.

Prepared at The University of Texas, Austin, Texas. The Project Reported on in This Publication was Conducted Pursuant to a Contract With the Office of Education, United States Department of Health, Education, and Welfare. A Limited Number of Copies are Available From the Division of Extension, The University of Texas, Austin 12, Texas.

ED003768

PRECEDING PAGE BLANK-NOT FILMED

Preface

For many years the correspondence study and audio-visual people have each been working in their respective fields in an effort to improve methods of instruction. In a few instances people from these two areas have gotten together to work on a specific project but have never combined to work for common objects in the two areas.

In the summer of 1960 a group of audio-visual and correspondence study directors met in Austin, Texas to discuss the possibility of a conference of the people from these two areas. As a result of this meeting a planning and executive committee was selected and a request was submitted to the U. S. Office of Education for a grant to finance a nation-wide conference.

During the summer of 1961 The University of Texas received a grant from the U. S. Office of Education to support a conference on "The Use of Newer Communication Media in Correspondence Study." Immediately following the receipt of this grant the planning and executive committee met and prepared the program for a conference to be held in Austin, Texas from February 4 through February 8, 1962.

The conference was directed toward three objectives: (1) To develop a guide for the use of available audio-visual media in correspondence study; (2) to introduce the newer communication media and discuss its potential in correspondence study; and (3) to set guidelines and specific projects for future study and research in the use of newer communication media in correspondence study. In addition to these three objectives the planning and executive committee believed that this conference would serve another purpose, one that could be as important as the three stated objectives. The audio-visual and correspondence study personnel would get acquainted, would learn more of the other's work, and would be much better prepared to work together on a common interest.

This report presents the proceedings of the conference and develops the three objectives set forth. To receive the full benefit of this report each part should be read and studied. Ideas may be presented by speakers which may not be discussed in the summaries.

The success of this conference was due to the cooperation, enthusiasm, and effort of all those who participated.

L. E. McDONALD, *Chairman*
Planning and Executive Committee

Welcoming Addresses

JAMES R. D. EDDY, *Dean*
Division of Extension
The University of Texas
Austin 12, Texas

LAURENCE D. HASKEW, *Vice-Chancellor*
The University of Texas
Austin 12, Texas

SPECIALISTS

HENRY C. ALTER, *Director*
Program Utilization
National Educational Television and
Radio Center
10 Columbus Circle
New York 19, New York

MAX U. BILDERSEE
Audio Cardalog
Box 1771
Albany 1, New York

LEE CAMPION
Associate Investigator
National Education Association
1201 Sixteenth Street N. W.
Washington 6, D. C.

JOHN L. DAVIES
Bureau of Correspondence Study
State University of Iowa
Iowa City, Iowa

ROY ALTON FRYE
Training Specialist II
Visual Instruction Bureau
Extension Building 101
The University of Texas
Austin 12, Texas

ARMAND L. HUNTER, *Director*
Television Development
Michigan State University
East Lansing, Michigan

DAVID KLAUS
American Institute for Research
Pittsburgh, Pennsylvania

O. S. KNUDSEN
Motion Picture Production
Alice Norton House
Iowa State University
Ames, Iowa

WILLIAM H. MADDEN, *Sales Manager*
Minnesota Mining and Manufacturing Co.
900 Bush Avenue
St. Paul 6, Minnesota

W. C. MEIERHENRY
Teachers College
The University of Nebraska
Lincoln, Nebraska

ERNEST O. MELBY
College of Education
Michigan State University
East Lansing, Michigan

MODERATORS

WILLIAM T. GUY, *Chairman*
Department of Mathematics;
Research Scientist (Consultant)
Defense Research Laboratory
The University of Texas
Austin 12, Texas

HUGH PROCTOR
Texas Education Agency
201 East 11th
Austin, Texas

Table of Contents

I. WELCOME ADDRESSES — PAGE
Laurence D. Haskew . . . 7
James R. D. Eddy . . . 9

II. PROBLEMS OF LEARNING AND TEACHING IN CORRESPONDENCE STUDY
Charles A. Wedemeyer . . . 10
Gayle B. Childs . . . 15
Discussion Summary . . . 22

III. CURRENT USES OF AUDIO-VISUAL MEDIA IN CORRESPONDENCE STUDY
Broadcasting Media—*Armand L. Hunter* . . . 25
Discussion Summary . . . 29
Audio Media—*Max U. Bildersee* . . . 31
Discussion Summary . . . 34
Projected Media—*Wesley C. Meierhenry* . . . 37
Discussion Summary . . . 45
Graphics and Manipulated Media—*John L. Davies* . . . 46
Discussion Summary . . . 51

IV. GUIDE FOR USE OF CURRENTLY AVAILABLE AUDIO-VISUAL MEDIA IN CORRESPONDENCE STUDY . . . 53

V. USES OF NEWER MEDIA IN CORRESPONDENCE STUDY
Broadcast Media—*Henry Alter* . . . 56
Discussion Summary . . . 60
Projected Media—*O. S. Knudsen* . . . 60
Discussion Summary . . . 63
Audio Media—*William H. Madden* . . . 64
Discussion Summary . . . 68
Graphics and Manipulated Media—*Roy Alton Frye* . . . 69
Discussion Summary . . . 71
Programmed Learning—*David Klaus* . . . 72
Discussion Summary . . . 76
General Summary—*Lee Campion* . . . 76
A Look to the Future—*Ernest O. Melby* . . . 79

VI. GUIDELINES TO THE USE OF NEWER MEDIA IN CORRESPONDENCE STUDY . . . 83

VII. COMMITTEE POSTSCRIPT . . . 86

VIII. APPENDIX
Planning and Executive Committee and Group Chairmen . . . 87
Consultants and Panel Members . . . 88
Participants . . . 89

PRECEDING PAGE BLANK- NOT FILMED

Welcome Address

DR. LAURENCE D. HASKEW

Maybe the first move to make everybody fairly welcome is for me to pause long enough to allow the people who are having to lean windward and ex-windward to turn their chairs around, if they would like to, and get comfortable. Would you like to do that? Quite naturally, I also obviously know that The University of Texas is very proud to have been selected to play host to this conference. We realize that this constitutes not only an opportunity but a high honor and we are grateful to you for attending this conference.

Quite honestly until I walked into this room I did not realize that there was so much weight in back of this business of correspondence study in the United States. Talking about weight around the middle; but also weight above the shoulder line. I recognized many of the names that are here on the cards that you are wearing. I am sorry that I do not know more of you personally, but I know from both names and from the achievements that have been attached to those names that we have here a group of people who have almost unlimited potential for forward movement.

I think the thing about this conference, as we see it at The University of Texas, is that it is addressed to another one of the pioneering areas of education in America. Correspondence study as such is of course about as old as any aspect of the higher or secondary education. There has been a lot of pioneering accomplished in it already, in fact so much that the natural temptation would be for those who are engaged in it to settle back and rest upon their laurels to continue the tried and proved procedures that have regularly year after year resulted in more and more people enrolling in more and more correspondence courses and we hope learning more and more. It is tremendously heartening to see this well established group in this area that is itself so well recognized devoting itself to a conference of this kind, the moving out into a new venture territory. I shall not attempt to cover the complete pattern of this conference into a welcome address, but I am tremendously stimulated and really enthused by the prospects of the proper conjunction between, what is so glibly referred to as the new educational media, and the procedure by which people, individual people, take the prime interest in pursuing an education for themselves. I doubt if there is any area in education that has as much to gain from the proper exploitation of what technology is giving us and will give us in the future as this particular area. Therefore, because you are engaged in some venturing, trying to shove back some horizons, trying to go tomorrow where you are not today, The University feels very much at home with you. This we hope is what preoccupies us, certainly it is what makes the privilege of working for The University of Texas a really high one.

We know you'll have a good conference. We hope that what we provide for you will be adequate to your needs. Although we are already showing that we operate off campus as well as on by conducting this particular conference at the Driskill Hotel, which is popularly known as the continuing education center of The University of Texas, we hope that you will find time and occasion to visit the Main University here. If there is anyone in the group who is interested in acquiring a medical school, we have several of those and we will be glad to negotiate with you on locations at other spots away from here. We do hope you will come out to the campus, shudder at the quarters which house the Division of Extension, if possible, sign the petition that Dean Eddy keeps on his desk all the time, get better acquainted with him, and give him the recognition that he deserves. We hope you will bask in some Texas sunshine, I see that it is promised until just about noon tomorrow when some more Nebraska weather will get here. Until that time we bid you welcome and after noon tomorrow Nebraska can take over.

Welcome Address

DEAN JAMES R. D. EDDY

Thank you Bill. I have learned a long time ago that I should never follow Larry Haskew in attempting to welcome anybody because he gets it too well done. He really does the job up brown. But I do want to add my little two bits worth too, because I saw the idea behind this particular conference germinate among some of you folks here two years ago at some of the NUEA meetings and then, of course, it was fostered and promoted from time to time until today it has become a reality. So that is one reason I am very happy to see you here because sometimes we are accused of going to these national meetings and talking a whole lot but doing nothing, and this is one evidence that you are doing something. I am particularly happy to see you all here in this, a joint meeting so to speak between two groups, and as Dr. Haskew said, this is something of interest and essential. I believe that if correspondence study is to go ahead in the manner that many of us think it can it is going to have to utilize all of the ideas that we can obtain from all groups.

Our good chairman is the only one who has given any jokes of any type. We are almost in the same position as the four deer hunters in Texas. They, of course, had some liquid refreshment as a protection from the freezing weather and; naturally, played a friendly game of chance during the night. When they awoke the next morning and realized it was the Sabbath, their consciences hurt them. Three of the hunters decided to go to church. The fourth felt that it would be a disgrace for them to go to church in their hunting clothes. One of the men mentioned that he had seen a colored church down the road about a mile and a half and suggested that they attend the services there. So they went and slipped in the back of the church, sat down in the rear pew. The services proceeded and at long last came the offertory. As the men felt in their pockets, the deacon passed the collection plate. All three of them must have been winners for they all put some green folding money in the collection plate. When the deacon got back up to the front and handed it to the pastor, the pastor looked down and said, "Who put that folding money in there?" The deacon answered, "Those three men on the back row." The pastor asked, "Well, what do you know about it?" The deacon replied, "I don't know much, but they sing like Methodists, they give like Catholics, they smell like Episcopalians."

So, I will say that I hope we can come out of this meeting, with some of you having a little bit of some of these other denominations rub off on you. And I hope, as has been mentioned before that the work that is only beginning here will continue in a successful workshop at Lincoln, Nebraska. We want to say that we are glad to have you here.

I will have that petition on my desk if any of you want to sign it, for we are in the oldest buildings on the campus, which I understand is customary for Extension Divisions, but we would like for you to come out and visit with us because we are proud of what we are doing if we cannot be proud of what we do it in. Thank you.

PART TWO

Problems in Learning by Correspondence

CHARLES A. WEDEMEYER

A recent book on *The Process of Education*[1] points out that "Each generation gives new form to the aspirations that shape education in its time," and goes on to observe that "what may be emerging as a mark of *our* generation is a widespread renewal of concern for the quality and intellectual aims of education . . . ."

All of us in education are concerned today with *what shall we teach and how*? Or, in terms of the learner, *what shall I learn and how*? The ferment in education has spurred new studies of both teaching and learning. In once staid halls where knowledge was thought of as something passed on to students by a kind of ritual laying on of hands, feverish excitement now accompanies learning through heightened experiences, experimentation, research, discovery. Learning and teaching have taken on new importance, new dimensions.

The problems of learning in correspondence study can best be identified, I think, by analyzing the activities of the learner and then bringing to bear what we know about the correspondence method.

It seems to me that the learner goes through a sequence of activities something like this:

1. The learner becomes motivated and sets a goal.
2. He appraises the situation; checks out the means at his disposal for reaching the goal.
3. He makes some preliminary trials.
4. He continues the trials; and he applies to the task wherever he can previously acquired understandings, knowledge, skills, processes, abilities.
5. If he is succeeding, he confirms appropriate responses, the new methods that he has devised and the solutions he has come to. He drops those responses that are inappropriate. If he is not succeeding, he has failed to develop and confirm appropriate responses.
6. He reaches his goal; or does not reach goal.
7. He experiences satisfaction; or he experiences frustration, a sense of failure. Here he may try to improve responses, may repeat same inappropriate responses with desperate purpose (not unlike the behavior of laboratory animals when under stress), he may modify his goal and start over; or he may give up.

These steps, psychologists suggest, describe what we do in learning purposefully.[2]

Let us look at this sequence of activities to identify the chief cognitive processes that are going on in the learner. There appear to be three processes going on nearly simultaneously.

1. *The Acquisitional Process*—The process of collecting, cataloguing, storing of new information derived from new experiences.
2. *The Transformational Process*—The manipulating, comparing, analyzing, interpreting, and

---

[1] T. Jerome Bruner, *The Process of Learning*, Harvard University Press, 1960. (This paper draws heavily on the excellent organization and summary of experimentation and research provided by Bruner.)

[2] For a detailed treatment of the items in this sequence, see Herbert J. Klausmeier, *Learning and Human Abilities: Educational Psychology*, Harpers, 1961.

generalizing of information for understanding and use of knowledge.

3. *The Evaluational Process*—The testing and checking to see whether the new knowledge and understanding fit the task at hand; the making of judgments regarding plausibility, correctness, adequacy, and satisfaction with results.

These three processes are going on in the purposeful learner almost simultaneously. Acquisition—transformation—evaluation; the eternal triangle of learning; each process meshed or mixed in complex relationship with the others.

Having separately reviewed the sequence of learning activities—the steps that the learner goes through, and the cognitive processes we believe are going on *in* him throughout these activities, we are now ready to see the learner as he learns by correspondence study, especially with reference to our concern for *the quality and intellectual aims of education.*

Looking at our subject in this way, I see five major problems in learning by correspondence study. These problems are not at all peculiar to correspondence study, but I think the nature of correspondence study requires that we give particular study to these problems to improve learning. Let me identify them:

1. *The first problem* is one of developing interest in the task, in the process, and in the outcomes of learning. Interest, of course, leads to motivation. Developing interest involves recognizing the task, reacting to its challenge, making a purposeful appraisal of the task, and desiring the outcomes. Interest extends to the process by which the task is to be achieved. Even though the learner may have no previous experience with the correspondence study process, motivations may be stirred in terms of self desires, or they may be desires to satisfy some other person such as a parent, a teacher or one of his peers. A learner's motives may even be in contradiction. Interest involves concepts of the self: the self of the past, the self of now, and the self that one hopes to be in the future.

In a guided learning situation, the teacher and the counselor are important at this point. The previous experience of the learner may be utilized to provoke interest. In addition, there is the stimulation of opening doors, the challenge of the unknown, the pressure of requirements for achieving a certain status, the anticipated excitement of discovery, the piquing of curiosity, the tantalizing yearning to know, to be able to do something. Even extrinsic goals are important in generating interest: competition with others for grades, for credits, for satisfaction of requirements, and sometimes even conformity.

The correspondence learner here may be at a disadvantage. Interest building devices that are common to the classroom are often lacking in correspondence study: extensive collections of attractive books, reading materials, charts, displays, films and other devices commonly used to motivate. Furthermore, the student may not have an opportunity to be counseled by a person whose responsibility it is to motivate and encourage. On the other hand, the correspondence student is generally somewhat more highly motivated than others to begin with. He doesn't get into a correspondence course without effort on his part. He must go through the process of finding a school, selecting a course, making application, being accepted, and paying a fee. There is an initial selection process going on, and we can assume that the correspondence student has some degree of interest/motivation at the start.

Yet there is a group of non-starts in every correspondence school or program. Why? Varied reasons, surely, but one may be that the course does not meet the expectation of the student. He though he was getting something else, and when the materials came, his interest/motivation died.

Alexander Pope, in his *Moral Essays*, makes an observation about learning that is quite apropos to a portion of correspondence students. He said, "Half our knowledge we must snatch, not take." If you think of "taking" knowledge in terms of regular classroom students, you see what Pope means by "snatch." Snatching is not unlike what some correspondence students do in enrolling for courses. Why? Might it be because the student frequently has no previous experience with the correspondence study method? Because he cannot easily get counseling of a competent, professional kind at this important point? Because he lacks adequate materials to work with at this point? Materials that in purpose, design, and execution are stimulating, are student oriented (not course oriented) and that provide the challenge, pique the curiosity, convey the excitement of discovery and exploration?

Is it in part that he is dependent upon the usually flat, impersonal and bookish printed word that often characterize the study guide, the book and other learning materials?

Is it that he has a paucity of experience on which to build interest/motivation, and no varied and effective ways of sampling experience at this point, or of looking ahead and anticipating what is to come?

2. *The second problem* is that of sensing readiness for learning. The non-start, the early drop-out, the under achiever might be *unready* for the learning experience selected or brought to him. Teachers generally assume that the students who show up in their classes or in correspondence instruction are indeed "ready." This assumption ought to be regarded skeptically. Readiness is a complex state of being. It involves past experience, tentative acceptance or setting of goals, appraisal of the situation, assessment of the means/goal relationship, a fairly realistic concept of the self, and acceptance of evoked motives of whatever kind.

In correspondence study what do we know about the readiness of a learner? We leave the responsibility to the learner to decide, by and large, whether he is ready—although we have checked his record for prerequisites and requirements; grades, achievement scores, etc. Useful as these tools are, they are only part of the picture of readiness. The non-starts, early drop-outs, low and under achievers may be the evidence that *readiness* is a problem which in correspondence study—as well as in class instruction—we have not yet learned to assess properly.

Is readiness a problem for the learner because his previous experiences are too limited? Not remembered? Not meaningful? Are his goals incompatible with his motives? Are his capacities incompatible with his goals and the tasks required to achieve them? Are his interests too parochial?

3. *The third problem* is that of grasping the structure of the subject to be learned. The structure of the subject being learned has been found to be of considerable importance to the learner.

The scientists now constructing curricula and learning experiences in the new courses in physics and math have been concerned with the problem of teaching the structure of their subjects. This emphasis upon structure has in turn been a stimulus to students of the learning process. The structure of a subject is defined as content learned in a related, meaningful way: not shredded bits or biscuits of information seemingly unrelated to other fields or subjects, but information acquired as part of a structure of meaning, a continuity of related experiences, a vector of significant activity. The structure of a subject includes the skills, principles, attitudes, ways of looking at things, and information, the understanding of which makes the whole subject and related subjects comprehensible. Structure is the way in which all the small pieces fit together to achieve a larger meaning ("The whole is more than the sum of the parts.") and in which knowledge is integrated, useful and humane.

The correspondence learner may be handicapped in finding structure in his subject. Some courses limit his learning activities to reading alone, followed by an antiseptic list of questions or problems for each unit or lesson. In such courses the correspondence teacher may have depended wholly on the author of the text to lead the student to perceptions of structure—an often sadly misplaced trust in textbooks, which are written chiefly in the expectation of explication by the classroom teacher, and the use of supplementary exercises, experiences, discussion. The correspondence learner is often too dependent upon the textbook. Learning—particularly in certain subject areas—requires more in experiential activities than even the good textbook generally supplies. The well designed/developed study guide can supply this requirement only in part. The communication of the teacher on returned lessons can supply this requirement only in part. And if returned lessons are late and long delays occur between submission and return of lessons, structure is hard to perceive, interest wanes and learning diminishes.

To perceive structure, demonstrations, lab-type experiences, seeing things, hearing things, doing things,—as well as reading about things—are needed. The doors that learning opens must reveal real landscapes, whose attributes make direct sense impressions. Stress on structure does not mean leaving out detail; it means seeing detail in relationship to meanings. This is important in remembering for we all know that unless detail is placed in a *structured pattern* it is quickly forgotten since it seems to exist in a void without meaning. We know, too, that transfer of training requires understanding of fundamental principles and ideas. Further, continuity of learning is dependent upon mastery of the structure of the subject matter.

The correspondence learner, therefore, needs to approach subject matter through more than reading—even more than good reading. He needs enriched experiences through every channel possible and involving every sense possible.

4. *Fourth* is the problem of learning intuitive as well as analytical thinking. The correspondence student needs to perceive the possibility, the need, even the imperative, of two kinds of thinking about what the structure of subject matter *means.*

For most students, analytic thinking is the only kind with which they have had experience. Where thinking *is* taught in schools, it is usually analytic. The importance of this kind of thinking is well-known, whether it be deductive or inductive. Analytic thinking is the careful, well-defined, step by step process of reasoning most often associated with learning.

The other kind of thinking is less often and less well taught, although it is now being emphasized in the new curricula and new methods. This is *intuitive* thinking, and although it is less well understood it may be of equal importance to analytic thinking.

Learning intuitive thinking requires considerable freedom on the part of the student. Whereas analytic thinking is rigidly structured, there is hardly any structure at all in intuitive thinking—at least so far as it is now understood. The intuitive thinker has no well-defined steps to follow; he maneuvers around in what seems to be a disorderly pattern. Underlying intuitive thinking appears to be an implicit perception of the *problem as a whole*—the big picture—as well as mastery of detail. But in intuitive thinking the problem as a whole receives major emphasis. By vague maneuverings of thought, by lightning flashes of insight across the poles of opposites, answers, understandings, conclusions, solutions are found. It is the strange methodology of producing answers without a method. It consists of using short cuts and skipping steps in a bizarre fashion, yet coming up with solutions.

Perhaps one reason intuitive thinking has not been taught so well or learned so well is that as a practical people we have distrusted intuition or "guessing." We have felt the need to have our feet on the ground at each step. And whether the problem would yield to analytic thought or not, we have enjoyed the security and comfort of the analytic process and had faith that eventually this process would provide the solution.

Analytic and intuitive thinking are complementary. The formalism of learning in school may have tended to devalue intuitive thinking. Many intellectual leaders today believe we may need intuitive thinking more than ever before in the rapid formulation of solutions to problems which can later be subjected to analysis and proof.

The correspondence learner may be handicapped in learning intuitive thinking. If the study guide is rigid, if he receives one lesson at a time as separate building blocks—he may never see the whole until too late. He may not be able to perceive the problem or subject as a whole, an important requirement of intuitive thinking. Or, if a solutions manual is slavishly followed by his correspondence teacher, and if the student cannot ever be permitted to detour from the standard route regardless of individual differences, he can hardly learn intuitive thinking.

I remember that Booth Tarkington commented in one of his books that there is a "Different world under every hat." We should not teach all students alike in the expectation that all learn alike. If a student does learn intuitive thinking by himself (as some do) and the rigidities of the study guide don't take this eventuality into account, the student lacks assistance in testing and proving intuitive thought—an important aspect of the process such as it is.

If the learner's experiences are flat, lacking in perspective and depth, are confined solely to evocations produced by words, a student may be unable to think intuitively. Sometimes it takes the visible embodiment of an idea—as in the use of the Stern Blocks in teaching math—to bring about the perception that is the basis of intuitive thought.

Alfred Whitehead, the philosopher, pointed out in an essay that education should involve exposure to greatness. Greatness is frequently allied to intuitive and creative thinking. The study guide, the text may not richly enough—convincingly enough—expose the learner to greatness. Perhaps films, records, TV, radio, etc., can be used to expand the *range of models* of greatness in learning experiences.

5. ***Fifth*** is the problem of evaluation. Throughout learning, the learner must be able to keep a running count of his wins and losses in learning; to perceive the ratio or balance of success/failure in his efforts; to chalk up a kind of Progress Quotient for himself in learning and moving towards his goal.

In some ways the correspondence student may be better able than the class student to evaluate his progress. He gets a grade and a critique on each lesson. He writes far more than the class student, has to commit himself far more, and hence must develop a more extensive acquaintance and understanding of his sources. But if his sources are limited, this sense of achievement is misleading. His Progress Quotient may be false. Lacking *many* reference points to check his position, he may in truth be lost while he thinks he's on the beam. Or, if the course is old, not up to date, the progress he thinks he's making may be cruelly misleading.

In this hurried and necessarily thin skimming of the problems of learning by correspondence study I have attempted to identify, however briefly, problems of the learner that quite possibly are special hazards of the correspondence method. That these problems are also present in the classroom and often imperfectly solved there, I am quite aware.

But as correspondence teachers we should take no comfort from the fact that other methods also have their problems.

I have stressed five problems related to learning by correspondence study:

1. developing interest/motivation
2. sensing readiness
3. learning structure of subject matter
4. learning both analytic and intuitive thinking
5. evaluating progress

I have tried to relate the problems of the learner to hazards in the correspondence method. I do not believe these problems result from deficiencies in the correspondence method (for the problems appear in other methods, too) but I do believe that ignoring these problems, or failing to work imaginatively to overcome them, may offer greater hazards for the correspondence student than students of other methods.

You will have noted that the problems I have identified have their roots in these hazards:

1. incomplete or delayed communication
2. inadequate experiences involving all the senses
3. imperfect conceptualization
4. weak motivational devices
5. rigidity of formal processes
6. overdependence upon the written word
7. lack of experience with a new method
8. absence of good interest-building devices
9. lack of activities related to the senses, doing, etc.

When these things occur, learning suffers. Enrichment of the process of learning by correspondence—the reason we are here—would greatly reduce the hazards mentioned. If this can be done, then learning by correspondence study will make its rightful contribution to the quality and intellectual aims of education in our times.

Problems of Teaching by Correspondence Study

GAYLE B. CHILDS

I once heard a correspondence study administrator say, "We need no further information on how to teach by correspondence study. We have been teaching this way now for forty years, and we know how to do it." It is your misfortune, and mine, that this person is not here tonight instead of me. Think how quickly we could dispose of this presentation and get down to the real business of this conference. But on the other hand, perhaps this wouldn't be so either, because if the statement were true there would be no need for this conference and none of us would be here anyway.

However, I am afraid that a more realistic appraisal will reveal that, along with all other areas of education, we do have some unresolved problems in correspondence instruction and, therefore, I really do have something to talk about.

Before proceeding to the discussion of specific problems I should like to mention one or two matters which may lead to better understanding. First, a few definitions. The terms syllabus or study guide will be used interchangeably to refer to the instructional instrument which is placed in the hands of the student at the beginning of his correspondence work. The term correspondence study teacher refers to the person who receives from the student evidences of his achievement and evaluates them.

Second, in some of the problems and questions I shall mention later, the lines will be too sharply drawn. The impression sometimes created will be of a black and white, either-or situation, when in actuality this condition does not exist. Time will not permit the spelling out of all of the shades of difference in practice, but this need not concern us particularly if the issues involved are clear.

Third, I think it is important to give attention to the fact that all teaching procedures include the same common elements and that any detailed consideration of a given procedure must recognize that this is true. Postman, in writing about audio-visual instruction in the September-October issue of *The Audio-Visual Communications Review* recognized this in his statement that "The analysis of the process of audio-visual education does not call for the formulation of special principles; it calls for the application and elaboration of the general laws of human learning." Now this seems like a fairly obvious statement, yet it is really quite perceptive and I am very sure that it was important that someone make it. There is strong tendency on the part of the uninitiated to attribute to activities with which they are not entirely familiar a degree of uniqueness which is often unjustified and to assume, therefore, that the rules which govern the operation of these activities must also be unique. It is this tendency which Postman was attempting to counteract.

The concept expressed by Postman applies with equal force to correspondence instruction. I am only sorry that we do not have in the field of correspondence education a publication of comparable merit in which some perceptive psychologist might have made this comment about correspondence study.

Simply making the statement, however, would not necessarily mean that everyone would accept it. Because correspondence study and classroom instruction must sometimes necessarily employ different procedures, it is easy to make the assumption that they are basically and uniquely different and that therefore the process of correspondence instruction does "call for the formulation of special principles."

This is, of course, not so. All teaching-learning situations contain the same essential elements. All must recognize that learning can only be done by the student himself and that the teacher's task is to assist the pupil in the process. In every teaching-learning situation there must be clearly recognized objectives, learning experiences must be provided which will help the student to reach these objectives, and suitable instructional materials must be made available to him. Some direction must be given the student as he engages in learning experiences so that learning may proceed most efficiently. In addition the teacher must seek to stimulate and maintain interest, supplement information obtained from other sources, and explain or clarify when explanation or clarification is called for. There must be an opportunity for self-evaluation by the student and for evaluation on the part of the instructor.

These are elements which are present in any effective teaching-learning situation and the learning principles which make them effective are the same irrespective of the setting in which they are employed. It follows, then, that correspondence study is not uniquely and fundamentally different from any other general method of instruction.

It is, however, apparent that the problems which grow out of different instructional settings will vary with the nature of the setting and that specific procedures for dealing with the problems will necessarily vary as a result. For example, the classroom teacher faces certain problems simply because he is teaching in a classroom context.

The classroom teacher must be concerned about discipline, which is to say that he must see to it that a classroom atmosphere conducive to desirable learning on the part of all pupils is maintained. He must be concerned with the problem of personal relationships among the students so that all students feel comfortable and accepted in the group situation. He must consider how he will take into account the individual needs, interests, and abilities of his students when he may meet 30 or more students in a 40 to 60 minute period and perhaps 150 or more students per day. He must give due regard to the problem of how to treat the body of subject matter called for by the course of study for his course with a group of students who in all likelihood vary considerably in mental ability and in rate of learning when all students will start and end the course at the same time.

This, I think, is enough of a sample to show that the classroom teacher does face certain problems simply because he is teaching in a classroom setting. He would not, for instance, face the same problems if he were operating in a tutorial situation and had but one student.

Similarly, correspondence study teachers do not face these same problems. They do not have comparable problems in discipline, in maintaining suitable social relationships on the part of their students, in making instructional adjustments to large numbers of students in short periods of time, and in trying to cover a relatively fixed body of subject matter in a set period of time with pupils who vary in the rate at which they learn.

They do, however, face a number of problems which, at least in some degree, are related to the correspondence study process. It is these problems to which we wish to give our primary attention this evening.

I should, at this point, make two statements. The first is I have not considered it to be part of my responsibility to suggest solutions to the problems I shall identify. The second is that I have not tried to limit the list of problems to those which in my opinion might best lend themselves to solution through audio-visual procedures. I have, rather, understood that it is my purpose to identify some of the problems involved in teaching by correspondence study and that this conference will direct itself toward contributing to their solution.

First, I should like to consider those problems which appear to stem most directly from the correspondence study process itself. Here we should begin by recognizing that correspondence study is a two-phase process. The first part of the process is carried forward by the syllabus or study guide. The syllabus bears the major responsibilty for establishing objectives, determining learning experiences, and indicating instructional materials to be used. A good syllabus gives direction, explains, supplements, illustrates, provides for review, stimulates interest, and encourages self-evaluation. Finally, it provides some means for the student to submit to a correspondence study instructor evidence of the extent to which learning has taken place effectively. This evidence may take many forms. It may be in the form of written answers to specific questions, it may be an original essay, a completed dress in a homemaking course, a report of an experiment in chemistry, or a transcribed letter in shorthand.

It is at this point that the second part of the correspondence study teaching process begins. The teacher who receives the "lesson" from the student must evaluate it and convey the results of this evaluation to the student. Reteaching and relearning may or may not be necessary. If necessary, it must be provided for.

The problem to be faced in this two-phase process is that it results in a rather sharp break in the learning cycle. When the correspondence study student has reached the point where he feels competent to develop the first set of required evidences of achievement and submit them for evaluation he is likely to feel that he has completed that part of the course. While waiting for the submitted lesson to be returned to him, he proceeds to the next unit, or assignment, or set of learning experiences. When the previous lesson is returned, it is no longer the center of his immediate interest. He is less likely to be concerned with relearning than would have been the case if evaluation had immediately followed the original learning situation and relearning taken place before new material was presented.

Another problem which grows out of the two-phase process is that in a majority of cases the syllabus will not have been prepared by the person who evaluates the students' responses. If the correspondence study teacher is not in sympathy with the syllabus approach, this necessarily creates a problem of adjustment.

Another problem, not unique to correspondence study, but one which requires a different approach because of the nature of the correspondence study process, is that of providing for individual differences. This is not a problem of adjustment to differences in the rate at which individual students learn. Correspondence study is an admirable device for providing for adjustment to differences of this type since each student can proceed at the rate most comfortable to him. It is instead a problem of content. The typical syllabus is a rather rigid instrument. It tends to carry all students through the same set of experiences irrespective of previous experiences or of capacity to learn.

There are syllabi which are prepared in such a way that they do provide for adjustment in course content. Also, the correspondence study teacher may, and often does, suggest or require individual students to follow varying procedures, to read different materials, or to carry out individually planned projects. The fact remains, however, that the problem of developing syllabi or teaching procedures which consistently take into account the individual needs of students in terms of course content is not one which we have adequately resolved.

Another problem present in correspondence study is that of compensating for the solitary situation in which the correspondence study student finds himself. Studying by oneself over an extended period of time can be a pretty lonely business. This is not particularly a matter of physical isolation. It grows out of the lack of opportunity to work with others on matters of common interest. Since the correspondence study student often cannot establish this kind of relationship locally, it becomes a concern of the correspondence study center to find ways of establishing warm ties with the student to reduce the feeling of isolation which he may well develop.

A *second* set of problems, closely related to those already discussed, are those which grow out of the problem of communication in a correspondence study setting. Foremost among these problems is the fact that correspondence study uses oral communication only to a very limited extent while teachers, by and large, have learned to depend primarily upon oral communication.

This really shouldn't be a problem. Practically anything that can be said can be written or expressed through some kind of printed symbols. But it *is* a problem since many teachers do not express themselves well in writing.

For one thing, they have never faced the real necessity for being precise. The classroom situation does not place a really high premium on accuracy of expression. If something isn't said well the first time, it can be repeated until the teacher stumbles upon the proper combination of words to convey his intent. But this will never do when one is writing.

Furthermore, writing is a somewhat more laborious process than is speaking. It takes longer to express an idea in writing than it does to say it. This may sometimes in correspondence study prevent the full expression that may be necessary if complete understanding is to be achieved.

Another problem of communication results from the physical separation of pupil and teacher in correspondence study. The teacher cannot sense immediately when misunderstanding occurs, nor can the student raise a question and secure an immediate answer when he does not understand. He *can* get an answer, but there is a time interval during which he either fails to proceed in the course or does proceed at the risk of developing understandings which are in error. This imposes upon the person who prepares a correspondence study syllabus and upon the correspondence study teacher a compelling necessity to express himself so clearly, and so precisely, and so completely that situations of this nature are reduced to a minimum. I shall repeat here, for the benefit of the audio-visual people who are present, a principle commonly accepted by correspondence study people. That is, that in correspondence study one must learn not only to express himself so that he may be understood but also in such a way that he may not possibly be misunderstood.

There is another problem of communication which is related to the physical separation factor. Communication is undoubtedly facilitated when two people know each other well. We consciously or unconsciously adjust our communication procedures to the person with whom we are communicating and the better we know him the more likely we are to select those procedures which will be most effective. Many correspondence study teachers get to know their students very well, but they do not have the opportunity directly to observe these students in a variety of situations which is the way in which we most commonly evaluate behavior. There may as a result be gaps in our knowledge concerning our students. This imposes the necessity for devising other means of learning to know students so that warm personal relationships may be established.

A *third* set of problems is related to the fact that in correspondence study one is regularly dealing with teachers who are not familiar with the correspondence study medium. Most teachers have had years of preparation for teaching and during all of this time it was assumed that the teacher would work in a classroom and his preparation was pointed in this direction. Likewise, any experience he may have had in teaching will in all probability have been in a classroom setting. It is from the ranks of classroom teachers that correspondence study teachers and course writers must be drawn since there is no other source of supply. No institution has a program for preparing correspondence study teachers as such.

While many teachers make the transition to correspondence teaching without too much difficulty, all require some orientation and in-service education. Also, there are many who will not or cannot make the transition.

There are, for one thing, those teachers who cannot sense the difference in the relationship of the teacher to the student in the classroom on the one hand and to the correspondence study student on the other and make the procedural changes which the difference in relationships requires. I recall, for example, a very competent and highly regarded teacher whom we secured to prepare a high school sylabus for us. Glaringly absent from the first unit she submitted were any directions to the student as to what he was supposed to do. When this was called to her attention her answer was, "But directions aren't necessary. I'll tell them what to do." It was explained to her that she would undoubtedly never see any of the students for whom she was writing. The explanation failed to produce results and on the last unit the course editor was still filling in the necessary but missing directions. This teacher simply could not visualize a student operating in anything but a classroom environment.

While the illustration may be extreme, this same tendency is present in some degree in all teachers when they first begin to work with correspondence study. It is only after they have worked in the field for a period of time that they begin to think within the correspondence study context.

Another problem in working with teachers inexperienced in the correspondence study process is that some of them apparently attribute to the process powers it does not possess. They seem to feel that correspondence study students can learn with a minimum of teacher assistance. I should like to quote from an article which appeared in the December 1961 issue of the *Indiana Alumni Magazine*. The article was written by a 1907 graduate of the University of Indiana.

"In my early years of teaching at Indiana University many other changes and additions came. One day Dr. Will Howe, head of the English Department, said to me he had learned that the History Department was offering a course by correspondence and that he thought we should do so, too. He asked me to make out a course in English composition for correspondence. Later on, during an exam week, he said we should have a course also in the novel, and for me to set that up as soon as possible. I could not get at it until exams were over. On commencement afternoon . . . I went to my office . . . and made out the first course offered by correspondence in that subject."

Now the idea that one could prepare in one afternoon a teaching instrument which is adequate to direct the learning activities of students for an entire semester would be humorous if it were not for the fact that some vestiges, at least, of that concept are still with us. It is not unheard of today for a course writer to prepare a syllabus which is primarily a "read these pages and answer these questions" type of document. Nor is the statement that the textbook is excellent and there is little that can be added an entirely satisfactory justification. If it is, there are either a tremendous number of poor textbooks in use in classrooms across the country or classroom teachers are wasting enormous amounts of time doing things which are completely unnecessary.

A *fourth* problem, in teaching by correspondence study, is that which results from the fact that we live in a world characterized by rapid change which, in turn, imposes upon educators the necessity for making continuing adjustments to keep abreast, if not ahead, of changing conditions. This idea has been expressed many times and particularly well, if somewhat dramatically, by Margaret Mead in an address entitled "Changing Education for a Changing World" when she said, "We are now at a point where we must educate people in what nobody knew yesterday, and prepare people in our schools for what no one knows yet, but some people must know tomorrow. We don't know how to deal with this situation because it is a new one."

Certainly the general problem of keeping instruction abreast of new developments is not one which only correspondence educators face. However, correspondence study procedures create some special problems which need to be resolved but with which we have not yet come to grips because the pressure has not been sufficiently compelling.

The primary difficulty here evolves from the rather high degree of rigidity inherent in current correspondence study procedure. A good syllabus takes time, and effort, and money to prepare. Obviously, it takes additional time, and additional effort, and additional money to revise or rewrite it. Also, as one would expect and as correspondence study administrators know, the best syllabi are prepared by the most competent people who are, as a result of their competence, in demand for other things than revising correspondence study syllabi. The effect of these various forces is to keep a syllabus in use, in its original form, for a period of time beyond that which, in some cases, may be educationally justifiable. Perhaps we have reached a time when we must consider how, in areas particularly sensitive to change, we may introduce more flexibility into the structuring of the syllabus so that change can be more readily effected.

The *fifth*, and perhaps most important, problem area I should like to discuss is that which results from a lack of adequate knowledge about how to teach by correspondence. I realize, of course, that we must know a great deal about it because we do teach this way with remarkable effectiveness. Our students learn and learn very well. They continue to come to us in large numbers and many of them send us fervent letters of praise for the educational opportunities we have provided.

But when it comes right down to it, what do we really know about the teaching methods we employ in correspondence study? About how many of them can we say, with reasonable certainty, that they are better than other methods we might be using instead?

Let me be more specific. Suppose we look at the matter of objectives which, I am sure, we would all regard as important. No doubt we would also accept the idea that the student should have them in mind as he proceeds with his work. But how is this best accomplished? Should objectives be clearly spelled out in the syllabus at the begining of the course and also at the beginning of each unit, or lesson, or assignment? Or should they be more subtly introduced and included in the introductory or supplementary comments which the course writer includes in the syllabus? Should the general introduction to the study guide accept the major responsibility for giving the student a sense of direction? Should the correspondence teacher accept any responsibility in this phase of instruction and, if so, how much? Or, should we go considerably beyond general current practice and involve the student much more than we now do in the determination of objectives? Should he set his own goals and, if so, how do we then make the necessary procedural adjustments that this will require?

There are other phases of correspondence study procedure about which questions can be raised. For instance, what is the best way to organize a syllabus? I have seen many correspondence study syllabi some of which use relatively simple and others more complex forms of organization. Is there a best form?

Do students find self-check tests to be of value and, if so, what is the best kind of self-check test and how frequently should such tests be used?

What kinds of motivational devices or procedures are most effective?

How far should we go in the use of study aids, and what kind of study aids are most important to include?

What kind of evidence should be required of the student regarding his achievement? If a response is in the form of written answers to questions, what kinds of questions are most effective? How much evidence should be required? At least one University correspondence study program experimented with the elimination of written lessons and depended entirely on test results. At the other extreme, some courses require voluminous reports in an apparent attempt to compel learning through a requirement that the student submit evidence that he has covered all aspects of the course. Is this sound, or is a sample amount of evidence of achievement sufficient?

What about the role of the correspondence study teacher? What should it be? Should he point out errors and leave corrections to the student? Should he write out detailed corrections? Is his most effective contribution in the area of motivation? Or is it encouragement? What *should* we ask correspondence study teachers to do?

What is the best way to make assignments?

What guidelines should we follow in selecting instructional materials in correspondence study?

What is good format in a correspondence study syllabus?

One final question before I close this overlong list. How much time should a correspondence study student be given in which to complete a semester course? Practice varies. Some institutions allow six months on the original enrollment, some a year, and some eighteen months. In regard to time beyond the original enrollment, some permit no renewals unless the circumstances are exceptional, others permit one month, others three months, some six months, and some a year. Also, some institutions permit but one renewal, others allow an indefinite number. The effect of all this is that a student may in one institution have a fixed amount of time in which to finish (although the amount will vary from school to school) and in another may continue indefinitely.

While administrative factors are involved in setting time limits, surely the overriding consideration should be instructional. What is the optimum amount of time which will result in the most effective learning? We really don't know. The small amount of evidence that is available suggests that it doesn't make much difference in terms of achievement how much time a student takes to complete. However, the wide variability of practice regarding the amount of time a student is allowed suggests that correspondence study administrators think it does and each has his own opinion of how much time is best. Perhaps a greater amount of evidence on this point would lead to greater uniformity in practice.

If we are to improve instruction by correspondence study then, there are five problem areas with which we must work. We must devise ways of dealing with problems which are related to the correspondence study method. We must find better means of communicating with our students. We must develop improved ways of preparing correspondence study teachers or of compensating for the lack of a body of teachers prepared to engage in correspondence instruction. We must introduce more flexibility into the correspondence study process to permit easy and rapid adjustment to change. We must examine the methodology of correspondence study to determine how it may be improved.

I think that this may be a long enough list of problems to keep us occupied for a time. As I said earlier, it is not my purpose here to suggest specific solutions. I should, though, like to make two general observations.

The first is that we badly need research on the methodology of teaching by correspondence. Practically no research has been carried on in this important area. The second is that someone would perform a very great service indeed if he would undertake in a very serious and thoughtful way to relate the generally accepted principles of learning to the process of teaching through correspondence study. Actually these two things must be done before we can find wholly adequate answers to some of the questions that have been raised.

There is one more thing which we must do and that is to develop the mental attitudes which will make it possible to bring about the adjustments that will be required if our instructional problems are to be resolved. Philip Coombs, Assistant Secretary of State for Educational and Cultural Affairs, in an article in the *Phi Delta Kappan* said, "There is no doubt whatever that if the United States is to catch up and keep up with its mounting educational needs, we must as a nation invest considerably greater sums of money in our schools and colleges .... But this is not all we must do .... What the advancement of education requires, just as much as more money, is a larger and more dynamic frontier of experimentation and new developments, and a pervasive professional mood which not only tolerates innovation but which welcomes and encourages it. Herein lies today, I believe, education's greatest shortage .... The key to dynamic progress in other sectors of our society ... has been a heavy emphasis on imaginative research and development, and a willingness, indeed an eagerness, to accept and apply the results of such research even if it means abandoning old methods, old processes, and old products to which people have grown fondly attached .... Research and development aimed at improving education has been at a pitifully low level and has never been take really seriously by most educators."

There are, I know those who will take exception to Mr. Coombs' position. But for the purposes of this conference it will behoove us to accept it. For that is precisely why we are here. We are here to find, if we can, new and better ways of teaching by correspondence study even if it means abandoning old methods, old processes, and old products to which we, also, may have become, without realizing it, too fondly attached.

Problems of Learning and Teaching in Correspondence Study

DISCUSSION SUMMARY

Correspondence study is an instructional procedure which permits an individual learner to improve himself to a pattern of supervised learning experience. There is no face to face relationship between the instructor and the student.

One college professor, trying to define graduate study, defined correspondence study as being an independent study idea with some guidance from a faculty member. Correspondence study students do more work than graduate students. Correspondence study permits the students to go as far as they want to go. This requires that resources be made available to the student.

Through correspondence study, opportunities are made available to all parts of the state, other states, and foreign countries. This is directed study by mail. Administrative devices must be provided for efficient processing of correspondence study material between student and instructor.

Correspondence study has improved over the past few years. Some audio-visual materials are being used but there is a need for a much more extensive use of them. These audio-visual materials must be sent by mail, therefore, they must be adaptable to mailing to individual students. They must also be simple enough to be operated by an inexperienced person.

It is important that correspondence study use new media because the student expects them. We must be organized to use the new media. We must be prepared to supply materials for the individual student as well as for small and large groups.

One phase of correspondence study which may not be ideal is in the preparation and teaching of a course. When the syllabus is prepared by one person and the student responses are received by another persoin there can be a difference of opinions on the student responses.

Another phase which is not ideal is the delay on the student's part from the time he submits a lesson until he receives it back from the instructor. During this waiting period the student may continue with the next assignment, not knowing the mistakes he made on the previous lesson. Or he may decide to wait for his lesson to be returned before starting his next assignment. This may cause a definite break in his learning process.

An isolated student must have some contact with someone when he needs help. There must be a continuing contact with the student so he will not feel he is alone. Apparently, because of this there seems to be too many responses required by college level students on their lessons. Many more responses are required on college level courses than on high school courses.

Some schools are using programmed instruction in correspondence study. Not much has been found out about programmed devices in correspondence study courses. The first step in using such devices is for the instructor to determine whether or not the device is appropriate for the course. Some studies are being conducted at present with students who volunteered. One study is to match comparable materials during the first year and to get an indication as to how well the students like the course. This study is being made in a high school mathematics course. There is a similar college level mathematics course available.

New media has not been accepted by all people on the college campuses, but we are beginning to see better results in grades and in the teaching approach since these media are being used. In general, it takes ten to twenty years for the acceptance of new ideas except in the field of education which takes much longer.

Automation could completely separate the instructor from the student. Newer media could also bring them closer together and strengthen this relationship. It is the desire of correspondence study people to strengthen the student-instructor relationship through the use of television, tapes, disc recordings, radio and/or any other media which will bring the instructor to the student or the student to the instructor. The impact of a great teacher on a student is hard to evaluate but each student, when possible, should have the experience of seeing or hearing his instructor.

Good and superior teachers are always in demand. We assume that there is some value for a great teacher to work with students. The way he expresses himself may bring the impact of his personality to the student. How to bring this impact to a correspondence study student? How do we do a great job of teaching through correspondence study? How do we get the great teacher in contact with correspondence study students?

There are various ways to bring the great teacher to a correspondence study student. A student may be given a biographical sketch of his instructor, this has become a part of the introduction of some school's syllabi.

A simple light-weight tape recorder would be an ideal device to have with our correspondence study courses. Through this medium the instructor-pupil relationship could be greatly improved. Some instructors present their ideas very well in writing, others do much better when speaking. The tape recorder with the written word would allow the best of each to be presented to the student. Also through the use of voice instruction the impact of a great classroom teacher could be felt.

The use of television and radio will offer the great teacher another media of contact with the student. Not all teachers can perform on television or radio although they might be a great teacher in a classroom. When these media are used we should get good people who are respected and can perform in these media areas. If these people are not correspondence study instructors they should work closely with the instructor when preparing the course.

The good correspondence study instructor must communicate with the student through whatever media is being used. Written comments on papers and written instructions are often misunderstood by the student. We must devise ways of dealing with this problem in correspondence study methods by finding better means of communicating with the student, by developing improved ways of preparing correspondence teachers, by introducing more flexibility into the correspondence process, and by critical examination of the methodology of correspondence study.

Finally, we have a problem in correspondence study of respectability. Many comments are made that would indicate that correspondence study is not a proper way to teach. There is no one way to teach. Classroom teaching is a way to teach and is a confined way of teaching, but there is no more reason to believe that you can teach better that way than any other way. If we had started our teaching by correspondence study methods and everyone had grown up studying by this method we would have the same difficulty in bringing the students into the classroom. The mind is set by a pattern. There are many ways to teach and each has its own problems.

It is the responsibility of the correspondence study people, directors and instructors, to change the attitude toward this method of instruction. We have not done enough to prove it is a good method of teaching. We could learn much from the audio-visual people in this field. We must have a closer relationship with the audio-visual people. There are classes in audio-visual instruction but none in correspondence study methods. We have not done as good a job as the audio-visual people in selling the importance of our method of study. When we improve our meth-od of instruction then we must give the best teaching techniques.

We are in a process of change in all education in this country. In the teaching field we will be using all types of media. The people in the media field are becoming aware of the needs of correspondence study and will assist in every way possible to improve correspondence study.

PART THREE

Current Uses of Audio-Visual Media in Correspondence Study

Broadcasting Media

ARMAND L. HUNTER

My specific assignment for today is to discuss the current use of the broadcast media in relation to correspondence study. If I confine my topic to the "current uses," this will be a very brief speech; because the simple fact is that very little relationship exists. Historically, adult education and academic instruction by correspondence study precedes the use of the broadcasting media for these purposes; and this chronological precedence has continued to persist. In other words, the weight of adult instruction has been, and continues to be, on the side of correspondence in all home study programs; and these correspondence courses and materials for the most part have been designed and developed quite apart from, and independently of, radio and television.

But while adult education home study programs by correspondence may outnumber the broadcast programs today, this quantitative lead is rapidly being overcome. Hundreds of credit and non-credit courses designed for, and made available through, the broadcasting media have been developed within the last few years; and the *rapid growth of new educational TV stations suggests that the broadcast method of home study instruction may very soon catch up with, or even pass, the correspondence method.* But the important thing to notice here, is not the relative aspects of procedure, numbers, or competitive status, but the fact that *these methods and forms of instruction have developed and continue to exist almost entirely unrelated to each other.* For example, I was able to find only four specific and carefully designed combination TV and Correspondence Study courses or series currently being offered. These were:

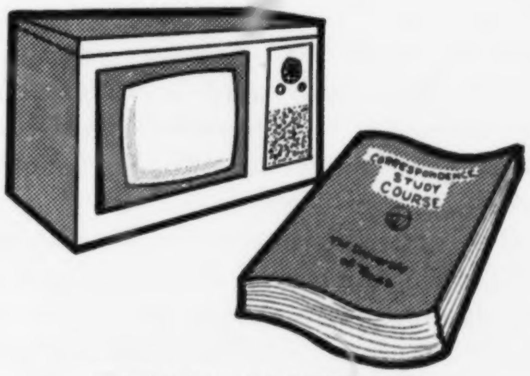
1. The University of Minnesota
   a. One TV-Correspondence course each quarter for 3 credits, broadcast over the local community ETV station.
   b. Subjects offered: Sociology, German I and II, Humanities, and Introduction to the Theatre.
   c. Registered enrollment small; but the general audience reaction is good.
   d. Student is provided with a study guide and list of recommended readings. He observes the programs, sends in required written assignments, and takes a mid-term and final exam on campus or under authorized supervision.
2. The University of Nebraska
   a. A special High School TV-Correspondence Study Program developed under a grant by the Fund for the Advancement of Education.
   b. Subjects offered: Algebra, Geometry, Chemistry, English, Physics, Art, Spanish, General Mathematics.
   c. An experimental research design and procedure

was developed for testing achievement and attitude.

- d. Program much more fully and carefully co-ordinated than most adult TV-Correspondence courses.
- e. Results reported:
  - (1) Effectiveness of TV-Correspondence Study is unrelated to levels of school ability;
  - (2) Attitude of students toward subject and teacher equivalent to that of regular classroom, but attitude toward method favors conventional classroom;
  - (3) Possible to teach more effectively in some subject areas by TV-Correspondence method that regular classroom (Algebra, English), in some areas TV-Correspondence not as effective as regular classroom (Geometry, Chemistry, Spanish), in some areas, no significant difference in methods (General Mathematics, Physics, Art).
- f. The University also offers telecourses in other academic fields with study guides and assigned readings, but not a coordinated television correspondence study program.

3. The University of Wisconsin
   - a. A special AV-TV course for teacher education produced under a Title VII grant of the NDEA. The course involved a combination of team teaching, television broadcasts, and quasi-correspondence study techniques.
   - b. Forty-two half-hour television lessons were produced and recorded on kinescope for distribution. A correspondence type TV manual was prepared and made available to the students; and a careful evaluation study was carried out.
   - c. The series was carried by six television stations with a total enrollment of 780 teachers, from which there was an 18% drop out.
   - d. The series was revised, some changes made in the programs, and repeated for a second year.
   - e. Results reported as very good by the Evaluation Study:
     - (1) Students' (teachers enrolled) opinions of the course rated it very high on practical value;
     - (2) The study guide was rated as very useful;
     - (3) Value of the lessons as aids to learning was rated very good;
     - (4) The work load was judged too heavy;
     - (5) On the whole the series was rated as superior to the typical professional education course.
   - f. The correspondence material consisted of a study guide, the manual, and assigned readings.
   - g. The evaluation and grading of the students was handled centrally at Wisconsin for all enrollees regardless of location.
4. Indiana University
   - a. TV-Correspondence courses produced for broadcast over local commercial station since 1953.
   - b. A team approach to the preparation, design, and production of the course is used involving the Correspondence Study Bureau, the Radio-TV Service, and the academic or subject matter department involved.
   - c. Over 20 different subject matter fields have been covered in these programs.
   - d. The enrollments for credit are small; but the general audience reaction is very good.
   - e. The procedure is the same as the others, the students view the programs, send in written assignments, and take a supervised final examination.
   - f. Students are provided with a study guide and list of recommended readings.

As I said, these were the only 4 instances that I was able to discover where television and correspondence study have been coordinated and designed into a unified instructional resource, with a definite and deliberate combination and blending of the two media for a specific learning purpose. Now, there may be other schools, universities, and agencies producing home study programs of this type; but I was not able to discover them. If I have left out any of your programs, or any of which you know, please forgive me and accept my apologies. I will be happy to add them to the small list of unique programs representing this pattern.



TEAM MATES?

Of course, there are a very large number of telecourses that are being produced and broadcast for credit and non-credit by established adult education and extension divisions which provide outlines, study guides, and recommended readings, and which require written assignments and supervised examinations; but, these are *not* TV-Correspondence studies in the sense of representing a carefully designed combination of the methods and techniques of both forms of media. In other words, the telecourses have borrowed some of the methods and procedures of correspondence study; but they have not carefully and systematically designed the correspondence elements into a directly related functioning system within the overall or total presentation. In the same sense, there may be some correspondence courses which have used, and/or recommended, certain selected broadcast programs for viewing or listening that were relevant. But, in general, I think it would be safe to generalize and say that when we compare Telecourses and TV-Correspondence courses, we find that while the two are similar they are conceived and conducted differently. And, this is true even when both are administered in and through the same extension or adult education division. Each form has tended to pursue its own methods, with the predominant emphasis being placed on either the broadcast program, or the correspondence material, as the primary learning source. Very few have really been designed in full and complete coordination.

Now, while it is quite apparent that television courses, or telecourses, have moved very rapidly to adopt some of the methods and procedures of correspondence study—the study guide, recommended readings, written assignments, and supervised examination, and some correspondence courses may have given a "nod" to radio and TV, the question still remains: Why hasn't there been a greater effort to combine these methods, forms, and resources into a new and unique totality? Where is the creativity that would bring these media into a "systems" relationship that would seem to promise a much more effective educational impact? Here, perhaps, is where broadcasting and correspondence could join together in an effort to realize what Whitehead called "the imaginative communication of information." And now let me move from the area of the relatively little that is being and has been done, to the area of what possibly could be done.

In a recent address at an extension conference at Michigan State, Malcolm Knowles discussed how adult education is in a process of changing its societal role. Since World War II, its role has become one of developing a cultured, informed citizenry, of helping every individual achieve his full potential. In terms of changing characteristics of subject matter and content, there has been a shift away from organizing the curriculum around subject-centered areas toward a problem-centered basis. There has been a shift from formal academic course structure to short courses, institutes, study groups, etc. *There has been a de-emphasis of credit in favor of learning for its own sake.* And, there is increasing concern for converting the cafeteria style curriculum into a related and "gestalt" type program with sequence, continuity, and integration. It seems to me that here is a tremendous opportunity for the development of adult education home study programs that would meet this new role, and new patterns of instruction, through the creative combination of the broadcasting and print media which together compose a major segment of the total adult learning environment.

In a little more formal and academic sense, what I am saying here is that the creative use of correspondence and broadcasting in combination, as a truly unique form of communication, could bring to adult education the kind of imaginative instruction that could be characterized by what John Walker Powell called the "three C's: Curiosity, Creativeness, and Comprehension. Curiosity is a motive, creativeness a process, comprehension a goal. There is joy in each of them, and together they make up most of the enjoyment of living. They all involve judgment, discrimination, decision-making; and 'judgment' is our common synonym for intelligence, decision our test of its rightness. And all of these apply in all of the life-tasks we perform as adults."[1]

In this connection also, I would like to refer to Whitehead and his analysis of the *Rhythm of Education* and the *Stages of Mental Growth.* He has described what he means by these as follows: "Life is essentially periodic. It comprises daily periods, with their alternations of work and play, of activity and of sleep, and seasonal periods, which dictate our terms and our holidays; and also it is composed of well-marked yearly periods. These are the gross obvious periods which no one can overlook. There are also subtler periods of mental growth, with their cyclic recurrences, yet always different as we pass from cycle to cycle, though the subordinate stages are reproduced in each cycle. That is why I have chosen the term 'rhythmic', as meaning essentially the conveyance of difference within a framework of repetition. Lack of attention to the rhythm and character of mental growth is a main source of wooden futility in education."[2]

---

[1] Powell, John Walker, *Learning Comes of Age.* (The Adult Education Association of the United States of America, New York: Association Press, 1956), p. 18.

Now if the planning and design of adult education home study programs were based upon this periodic nature of human life and activities, and this cyclic character of mental growth, we would have something quite different from the courses and schedules which now ordinarily prevail. Instead of quarter or semester series, designed to correspond to academic periods, and based upon the schedules of the school and classroom, adult programs could be made flexible as to number, length, duration, and time of transmission. This would require a design based upon a thorough knowledge of the learners' relative levels of mental development and need, and of the rhythm of their particular patterns of activity. And, it is here that research would need to make a very real and necessary contribution.

In addition to the role that broadcasting-correspondence courses might play in the development of the stages of adult mental growth, within the rhythmic patterns of adult learning, and at all levels of adult interests, activities, and experience, these media are capable of still another role—one which also needs to be performed, if education is to fulfill its total responsibilities to the adult learner. *This is the role of helping to re-develop creativity. There seems to be no question but that creativity, or the capacity for creativity, or the ability to create, is all but lost in the adult individual.* Harold H. Anderson tells us that: "The infant starts life in a relatively Open System of interacting and of freedom of interplay with his environment. As he develops in his ability to communicate and to extend his mobility, the environment of persons begins to close in on him. The child encounters a complicated system of environmental demands, tabus, socializing and acculturating processes. These early requirements for conformity are climaxed by a school curriculum which also is mostly Closed System learning and from which there is no escape. The environments of most children do not stimulate nor even permit the continuing process of development in creativity. It is not surprising that in early childhood creativity is universal and that among adults it is almost non-existent."[3]

For the adult—the conditioned product of the primarily closed systems of the cultural environment and formal education—*broadcasting and correspondence* could provide a means for opening the door once more to "originality, experimentation, initiative, and invention."[4] The creative use of these media to develop "creativity," to open up new and challenging relationships, to provide new and stimulating experiences, to motivate new actions and patterns of behavior, is one of the most promising contributions which could be made to adult learning, and one that has been neglected for the most part up to the present time. There would seem to be a very great need for experimentation in this direction; since the loss of creativity, and of the opportunity for creativity, are factors which apparently tend to produce in the individual certain things which trouble many of us—the increasing tendency toward "conformity, submission, and psychic atrophy."[5]

One final aspect of the role which broadcasting and correspondence might play in the process of adult education is that of carefully designed elements within the total informational and learning resources environment; and now we are back to our combination or "systems" plan. Instead of a pattern of utilization that is essentially individualized, self-contained, isolated, and unrelated, it would seem that a much more effective use of these media could be made, if they were "programmed" in relationship to all the other forms and sources of communication, information, and education which also contribute to, and have a place in, the adult learning situation.

In other words, this would be to use broadcasting and correspondence as essential components within the total complex of existing resources that are available, to design and plan them from the start with full consideration of the place and contribution of all the other elements, and not to use them as is now most often the case—by themselves and largely unrelated. This would produce an entirely new and different pattern of home study programs, one that would realize the potential of each medium as a part of the *whole*, related in definite and precise order to all other learning resources; this *whole* then being greater than the sum of all its parts. This is the kind of a "systems" approach to adult education, in which I believe broadcasting and correspondence could play a much more significant and effective role than they now play by themselves.

---

[2] Whitehead, Alfred N., *The Aims of Education*, (New York: Mentor Books, 1955), p. 29.

[3] Anderson, Harold H., "Creativity and Education," (AHE College & University Bulletin, Vol. 13, No. 14, May, 1961), p. 4.

[4] Ibid, p. 1.

[5] See Ibid., p. 3.

I have tried to push out the boundaries of the typical and present uses of correspondence study and broadcasting in the process of adult education, in order to suggest some possible new dimensions of application, and to urge a more creative design in the realization of their role and function. The motivation for this is very simple. I am more concerned about the possibilities of what might be done and needs to be done, than I am about what is now being done as a matter of standard practice. And, I am concerned because adult education grows increasingly complex, and is beset with unique and particular problems. Some of which are identified by C. Hartley Grattan as follows: apathy; the difficulties inherent in bridging the gap between high and popular culture; the difficulty of demonstrating the high utility of the nonutilitarian; the difficulty of overcoming the average adult's sense of cultural inadequacy; the need to overcome the notion that age makes learning impossible; and the trials and tribulations involved in dealing with those persistent persons who are more "yearners than learners."[6] These are what Grattan calls the *Permanent Challenges to Adult Educators*. They are the difficulties to which the flesh of adult educators is inescapably heir; they perpetually cast their dark enigmatic shadows over the adult educator's world. They cause the adult educator to select as his private hero, not Hercules cleaning out the Augean stables with celerity, but Sisyphus of Corinth eternally rolling his stone up the hill."[7]

Now, I may have been guilty of implying that the creative and imaginative use of broadcasting and correspondence study in a carefully coordinated "system" design would solve all the problems of adult education; however, I'm sure we all know that this is not the case. It will not solve them; but a little intelligent planning and teamwork could do much more than has been done up to the present time, in the way of *helping* to solve them. We may not be able to relieve Sisyphus of his burden and task; but together we might be able to carry a good share of the load, or at least succeed in shortening and smoothing out the path a bit.

DISCUSSION SUMMARY

Television

Television courses carry the trappings of correspondence study in direct relation to the learning designed in terms of the combinations. Television courses, however, should carry a portion of the study guide, and textbooks, all contributing to the over-all course.

In using commercial stations for broadcasting television courses, the pattern takes a different form than if a college or university station is used. A series of lectures may be combined with other entertainment aspects so that the requirements of the mass audience (which has no actual interest in the instruction phase) may still be met. School-of-the-air stations are doing this now. Local commercial stations hesitate to broadcast a series of lectures or talks. They want discussions, dramatizations, personalities, etc. Interesting design, in order to be accepted by the audience, must be considered. Instructional television, however, in order to be truly "instructional," must not be specifically designed to appeal to the mass audience and to attract the large viewing audience, but instead must be simplified and specified to present the most educationally sound method of presenting the instruction. It would be advisable, also, to keep in mind that instructional television is not directed to a mass audience, but instead there is one-to-one relationship actually existing between the instructor and the viewer.

---

[6] Grattan, C. Hartley, *In Quest of Knowledge*, (National Board of Young Men's Christian Associations, New York: Association Press, 1955), p. 310.

[7] Op. cit., p. 310.

Television and correspondence courses have been successfully combined and results compared of those students who used the homestudy course combining television and the normal correspondence work with those students who finished the course entirely relying on the normal correspondence course type of study. So far, the combined courses have been offered entirely as non-credit courses and consisted of the lesson presentations and an open-book final examination.

Modifying correspondence courses for television presentation has proved to be too expensive and not well-enough attended in some cases. These courses were also found to be the lowest rated programs on the television stations. It has been suggested that educational television programs are planned first, then a text or a study guide be specifically written for the course. It is hoped that in this manner, the attendance rate would rise.

A problem also arises when one considers the type personality which is required for television instruction. It has been suggested that a good instructor who is familiar with the course need not be a "performer."

Audio

Much is being done experimentally in libraries and listening libraries to expand the present uses of records, tapes, and other audio material which is rented to students by school administrations. Correspondence administrators have expressed the desire to have correspondence studies offered through tapes with mailing the recordings to the student for home use. It would be beneficial to have oral reports from students sent to the instructor, thus giving the instructor a better idea of what the student is learning than do the written lessons now commonly used. Many libraries have tape recorders as well as record players which may be used by students for these purposes.

The cost of making records and tapes depends upon the equipment possessed by the college. Professors doing the recording will need an editor. The cost of a fifteen-inch record is higher than the cost of a one-hour tape; both tapes and records become less expensive when ordered and produced in quantities over 100.

In the classroom, students and instructors are often diverted by one thing or another. A psychological listening factor is involved in the recorded presentation; hence, because more concentration is involved when interest is focused only on listening, the classroom presentation is, in some respects, not as efficient as the tapes. Well-prepared tapes are lessons which simplify the contents of a lecture; the simpler the content, the better the oral or spoken word becomes. In preparing the taped lecture, the instructor does a much tighter, direct, and efficient job of presentation. Everything the tapes have done have been good.

Tapes should be preset and predesigned to give the oral interpretation of the content, particularly for the benefit of using tapes in correspondence work.

The comparison of reading and listening results in the fact that a higher level of difficulty of content is connected with reading. Unique information is presented in tapes with the professor indicating the idea, the information, or the content of the material through degrees of intensity in which he treats the subject matter. In this way, irrelevant materials are omitted and the simplicity of the lecture reveals the value of the subject matter.

The taped or recorded (or even televised) instruction is essentially geared to the individual in the same manner as a personal "across the desk" talk with a student. There is no mass psychology involved, such as that of a mass audience required by a comedian in which it is all-important, but here a one-to-one relationship exists between the instructor and the student. Courses, therefore, should be designed for the individual. Psychology existing with those courses directed at the individual will be more effective than that of the courses aimed at the "lower intelligence level" or at illiteracy.

Audio Media

MAX U. BILDERSEE

When Bob de Kieffer called and asked whether I would be interested in exploring the current uses of audio materials of recorded sound in correspondence study, and in reporting to you here today, I was delighted.

Dr. McDonald, Chairman of your Executive and Planning Committee who has done such a magnificent job of arranging this conference, found time to seek helpful information for me from some of the institutions represented here. I, in turn, sought data and reports from other institutions.

Our findings are almost parallel. We both discovered some scattered but not general use of audio materials in foreign language instruction on some levels in correspondence study. My own information is spotty and indicates that such application of audio to learning in correspondence study is the exception rather than the rule. Commercial organizations, those selling both instruction and materials tend to use audio more generally than do our colleges and universities.

I did learn, but yesterday, that one of your colleague institutions, the University of Wyoming, has offered an audio course in education, employing recorded lectures as basic. The reactions noted to date in this experimental procedure indicate a three to one ratio of approvals for such activity. I hasten to add, supported by our friends from Laramie, that the whole story is yet to be told, but the fact is worth reporting.

Regrettably, the fundamental graphic representation of the deliberate use of selected audio materials in correspondence study must be indicated by a dour expression, even a grimace and a slow horizontal movement of the head from side to side. And sound can be added to this rather dull and depressing picture after this fashion—tsk tsk tsk!

This report, if it is to be at all helpful to you, must resolve itself into a discussion of what *can be done* with materials, skills, and audio documents at hand, what is not being done, rather than what great strides have already been taken. Such is the case. I am sure you share with me the preference for studying the matter for facing the facts, and for realigning thought and action with the determination that appropriate and effective use will be made of all the communications media in correspondence study.

We are at a cross-roads in correspondence instruction. We have an opportunity here and now; an opportunity, we may not again have it, to adapt the modern instructional and communications devices and media to ongoing and expanding programs.

Happily, it is not true today—but ten years hence John Greenleaf Whittier's lines,

"For of all sad words of tongue or pen,
The saddest are these: 'It might have been!' "

may be unhappily significant!

Let us take stock. Let us take stock of the audio equipment that is now available in reasonable, even large quantities. It is reasonable to assume that students have, can secure or can have access to such machines.

First—there is the standard phonograph. I refer to the microgroove record player capable of reproducing recordings at the newer slow speeds. Thirty-three and a third rpm—yes, of course, 70 rpm—not necessarily. But sixteen and two thirds rpm yes—for there is much worthy material available on newer discs at these slower speeds.

In this area, I urge you, as leaders who must be aware of newer developments to keep alert for—to listen for the first signs of newer record playing speeds. There has been considerable experimentation, as I am sure you all know, with the speed of eight and a third revolutions per minute. This has been carried forward by those serving sightless people with recorded material. Commercial organizations are studying, now, two new ideas.

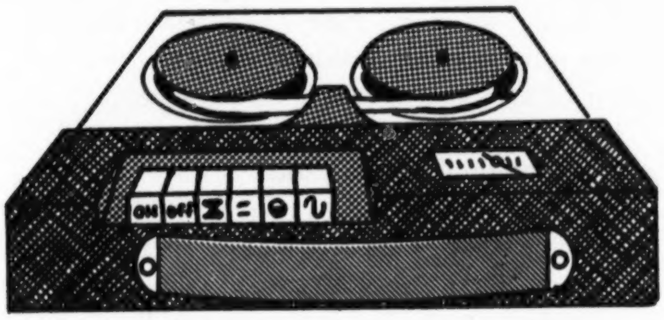
The first of these is public distribution of these newer slower speed recordings. *They will involve speech only.*

The second is the adaptation of dual track or stereophonic recording techniques to the disc so that the available groove space or record time can be doubled.

Let me be more specific. The common microgroove recording at 33.3 rpm offers 25 minutes of sound on each side of a twelve inch disc—a total of fifty minutes.

The 16 2/3 rpm recording, because some technical problems are overcome with the slower recording, more than doubles the available time on each side. Thus, it is possible, on a twelve inch recording at this speed, to offer 60 minutes on each side—a total of two hours of recording covering both sides of a single disc.

At eight and one third revolutions per minute—the total obviously is again doubled, and reaches four hours per recording—two hours on each side. The quality is adequate for voice presentation.



TRANSISTORIZED TAPE RECORDER

Through dual track recording—plus mechanical isolation of grooves in playback which is subject to current experimentation, all of these times may be doubled! The standard 33.3 rpm microgroove recording may offer fifty minutes per side, almost two hours per record—the 16 2/3 rpm recording a total of four hours, and the 8 1/3 recording may offer eight hours of such recorded material as lectures and discussions on a single recording! This must have bearing on your planning. I am convinced this is practical, possible and predictable.

Tape recording is similarly expanding the potential of your service to your clients. Tape speeds are being reduced—and the number of tracks increased. A four track tape at 1 7/8 inches per second is not unknown. Depending upon the length of the tape use—total recorded time can be reckoned.

Obviously, mechanically and electronically, audio has arrived for correspondence instruction purposes. Are you ready for audio even though, as you all immediately recognize, we have discussed only communication—but point to point communication.

It need not be a one-way street! For the tape is an admirably versatile tool, and can be used for two-way communication between student and instructor at the will of either. Effective use of two-way communication via tape will create administrative problems which can be surmounted.

You may ask what recorded materials are available. At the moment they are limited because the market has been limited, and because the imagination of commercial producers must be aligned to the recognizable and definable demand for their product.

Yet, here in Texas, there is a company, ACADEMIC RECORDING INSTITUTE, which has begun to break through. They have produced not one or two—but fifty hour-long interview recordings featuring Samuel Eliot Morison, John Mason Brown, Charles Frankel, Ashley Montagu and C. Northcote Parkinson.

The instructional areas served are not inconsequential. Samuel Eliot Morison, of course, discusses American History beginning with the settlement of New England and continuing through Pearl Harbor and Allied Strategy in World War II. Certainly material of this nature, offered by a man of Dr. Morison's stature, can be brought to the attention of your correspondence students and used by them.

Briefly, John Mason Brown discusses "The Humanities." He deals with the theatre, the artist, style, the classics and other aspects of the artistic man in his environment. Ashley Montagu, of course, discusses anthropology in his series on "The Nature of Human Nature." C. Northcote Parkinson looks to matters of political thought and government, and Charles Frankel expresses himself vividly in terms of philosophy and our free society. These are not surface skimmers—but rather discussions in depth worthy of your attention, and worthy of your students.

Shall we go further? In the area of literature, there is great competition involving three record producers: London Records, Spoken Word and The Shakespeare Recording Society in the presentation of full length plays for listening. These are largely or wholly uncut—and because Mr. Shakespeare wrote for a largely illiterate audience—because he wrote to be heard rather than read—they are ideal for records.

In the area of theatre there are additional records. "The Quare Fella," "J.B.," "John Brown's Body," "Death of a Salesman," "Peter Pan," "Ruth Draper Monologues" and "Saint Joan" are a few which come to mind. There are more—many more. And here is the basis for a complete audio correspondence course.

In the field of poetry—the sky is the limit. But I commend to your attention the recordings of American poets offered by Yale University under the Carillon label. You know, I have reached the tentative conclusion that the horizon is limited only by our own foggy views.

At this point I anticipate the question of "How do I learn about these recordings? Where can they be purchased? Who publishes them?

Permit me to take the last question first. Some of the leading publishers in this field are Caedmon, Spoken Arts, Spoken Word, Folkways, Academic Recording Institute and the leading major publishers like RCA Victor, Columbia and Decca. There are others too. The list of some forty or fifty record publishers serving this area is too long to repeat here.

Where can they be purchased? Your local record dealer can secure such recordings for you. Or in many instances you can order them directly from the publisher. Further, ordering in large numbers should entitle you to considerable discounts.

Finally, where can I learn about them? There are several sources which I commend to you. First—Look to the Schwann catalogue, or the Goody catalogue (137 Newbery Street, Boston) (New York) for title lists without descriptive embellishment. Second, look to your regular periodicals. Although critical emphasis still rides on the musical recording, in keeping with public demand, occasional reviews of other records are included in *The Saturday Review of Literature, The New York Times Sunday Edition, The New York Herald Tribune* (Sundays) and other periodicals. Do not overlook *The Atlantic Monthly* and other such journals.

For Audio-visual folk—there is EDUCATION SCREEN AND AUDIO-VISUAL GUIDE which carries reviews of many of the recordings I have mentioned. Indeed, Educational Screen is one of two periodicals to which I have been privileged to make measurable contributions in the area of the spoken word recording. The second is Audio CARDALOG which is designed as a cross-indexed card reference to such recordings and which, as of today, is more than fifteen hundred cards deep.

Look too, to the National Tape Repository which is now in the capable hands of Bob de Kieffer. His leadership in this area, as indicated by his first steps in recognizing the service, augurs well for us all. The National Tape Recording Catalog lists a wide variety of tested and evaluated instructional materials available to you on demand for very limited fees.

The cry that 'there is nothing available' is largely to be interpreted as meaning "I haven't really looked!"

Finally, look to your own faculties. There is not an institution represented here that does not boast many very well known and widely respected teachers who have it within their power to prepare and present audio material which, added to the present correspondence courses, can give courses and persons a status heretofore unimagined.

I have thus far spoken of 'audio' as though it were a medium to be considered in an intellectual vacumn—to be considered alone and apart from other media of communications.

Let me stress and reiterate that audio, alone, is no more effective as a communications medium than sight alone—the motion picture without sound is but half the presentation—broadcasting a stronger means of communication with the television picture, and the telecast without sound (however pleasant from the parents point of view) is wholly unsatisfactory.

Recordings, to be most effective in instruction, must be coordinated with visual presentations. Each must be integral to the other. Information presented in one medium can be reinforced by information stressed in the other. For today's critical student, as an example, Shakespeare recordings can be most valuable when the student reads along with the performing cast—and interprets the work as he progresses through the manuscript.

There is an area of audio in correspondence education—indeed in general education—which has yet to be discovered. There is good reason why this group should pioneer in the utilization of specific combined media to present effective instructional data.

Let me digress—a few years ago the idea of programed learning was drawing-table and bull session discussion material. Today programed learning is a full fledged member of the educational community—growing rapidly, subject of wide experimentation and largely accepted. Today the use of programed learning pervades all levels of instruction, from the primary grades through advanced courses, and from the skill subject areas to the presentation of theory. Indeed, this application of Socratic teaching principles promises to add a new dimension to general home and school instruction—correspondence and classroom study.

You and I should now look ahead to the completely audio-visual programed learning material —and you, as both correspondence instruction experts and programed learning practitioners have an unparalleled opportunity to grasp leadership and demonstrate the potential of these combined media. Who is to gainsay us that tomorrow's teaching machine will be a combination of a tape recorder—using a pre-recorded tape for presentation; with blank spaces for response; activated by solenoid or other automatic devices and coupled with the printed program in such a manner that the student can receive, at the will of the programer, alternate audio and visual stimuli, or combined audio-visual stimuli to accentuate and accelerate response, thereby speeding both learning and retention? Happily, education is dynamic not static. Changes for social, economic and political reasons are a regular phenomenon.

In the past two decades we have all seen, and we have each struggled with parallel phases involving the compression of the curriculum, the introduction of new media and alleged new means of instruction, and the stress of times calling for new emphasis upon certain areas. This is all mirrored in the turnabout of viewpoint from 'no federal aid' of not too many years ago to the present realization that federal support is essential to instructional progress.

In terms of the first area, compression of the development and equalization curriculum, we are teaching material today in our secondary schools which was once reserved for colleges; in elementary schools material which was introduced in high school. Conversely; the effective utilization of instructional materials and communications media has moved up through the ranks, and today more than ever before secondary schools and colleges are employing those media—films, radio, recordings and television, which were once reserved for the primary and intermediate grades. So be it with our correspondence instruction. As we approach and encompass more advanced areas of teaching, so too we must rely upon all the new media to make our teaching effective.

It is not just gossip, it is common knowledge that one of the leading non-public supported midwestern correspondence schools is now planning the expenditure of millions, literally millions, to entirely revamp and reorganize both their course offerings and instructional procedures to take advantage of newer media, and newer methods. We are challenged to do more than sit passively by and observe this change in the making—to be second best is to lose.

I shall not labor these several points, for in the forthcoming discussion groups I anticipate that each will be dissected for study, scrutinized in depth with greatest care, and then reassembled in a form none of us now foresees. But I also anticipate that from such cross study and open exchange will come the foundation of what will be done today and tomorrow.

I do want to return, for just a moment however, to two aspects of my opening remarks. The first is that in the field of audio there is an area for dramatic development which cannot be overlooked. No technical difficulty must be allowed to stand in the way, deter or even defer immediate action.

Second I would recall again Whittier's lines for they have meaning to us here and know:

"For all sad words of tongue or pen,
The saddest are these: 'It might have been!"

DISCUSSION SUMMARY

It was agreed that audio media include: "Primarily the recording media such as records and tapes. While radio has been included somewhat, there has been a tendency to stay with tapes and records."

Having defined audio media, the sub-group then gave a few of the reasons why audio media is of concern to correspondence study personnel. These reasons were: (1) people are used to talking and listening and, hence, the audio media present no deviation from normal procedure; (2) when mass produced, audio media are relatively inexpensive and, thus, present no real financial hardship on the producers of correspondence courses; (3) use of audio media actually increases the amount of voluntary reading done by the students; therefore, the media can be used to stimulate student reading; (4) audio media materials are readily available on the commercial market so they can become readily accessible to both the course producers and consumers; (5) the audio media can do much to reduce the time element hazards which often occur in correspondence study courses by conveying information, tone and subtlety of meaning through an additional sense rather than relying only on the visual; (6) the spoken word with the written word tends to clarify; and (7) while much has been learned about the audio media there is still a lot to learn about what we can do with tape and records. This should challenge men to continue to experiment and learn from their experiments.

In presenting what is known of audio media value to correspondence study, the subgroups gave the following statistics: (1) thirty-seven (37) institutions in this country currently have tape-for-teachers-programs through which tape recordings are made available for classroom teaching use; (2) approximately eight per cent (8%) of all tape recorders are located in homes of the lay public; six to nine per cent (6-9%) are in churches and the remainder of recorders available for educational purposes are found in schools —public and private; (3) ninety-four (94) of the three thousand, two hundred and twelve (3,212) regularly offered correspondence study courses employ audio media. This constitutes about a three per cent (3%) usage; (4) the University of Iowa has found that the enrollment for a twelve-tape course surpasses that for the forty-tape course; and (5) use of the audio media in correspondence study courses is severely impeded by existing copyright laws. As one of the participants pointed out, "Copyright laws are more strenuous for the audio media than for the publishing field. You can't use anything you want for education purposes." Three comments seem particularly appropriate concerning statistics about current uses of the audio media in correspondence study courses: (a) "We are not making too much use of the audio media in current homestudy courses"; (b) "Recorded responses are too expensive"; and (c) "A few indicated what they plan to do. Others felt they should do something but they were not specific as to what." In essence it was agreed that some use was being noted; however, much more could and should be done.

In the process of investigating why more hasn't been accomplished in incorporating audio media into correspondence study courses, the subgroups noted *fourteen* problems. These ranged from equipment through organizational structure to student-allied problems. The problems noted were: (1) many institutions do not have adequate storage space for the equipment and material while they are not in use; (2) initial cost of duplicating equipment is quite high and, thus, in some cases prohibitive; (3) present recorders and playback units are too bulky for ease of shipment to and from the instructor; (4) many units are too complicated to permit rapid, easy, efficient operation; (5) there is a tremendous lack of standardization among the units and, thus, tape speeds, machine parts and accessories may vary greatly from one unit to the next; (6) cost, quality and availability are all linked to volume of production; hence, it is almost impossible to solve one problem without involving the other two. This makes the task very complex and at times discouraging; (7) certain specific teaching materials, i.e., tapes and records, in this case, may not be available in sufficient quantity to meet the instructional demand; (8) as in almost any group it is difficult to reach the remote individual who may or may not be in a group, motivated, a rapid learner, etc.; (9) not all students who would enroll in an integrated audio media correspondence study class can do so since equipment to do so is not universally available; (10) obtaining adequate financing from the correspondence study administration for such ventures is difficult and at time nearly impossible. Thus, keeping the administration informed as to why as well as who, when, where and how is a problem which needs to be met if such courses are ever to become really prevalent; (11) arranging for clearances, residuals and other types of recognition has discouraged many from doing more with the audio media. Some fairly simple, widely accepted agreements should be worked out to serve as models for handling this problem; (12) not all good lectures are as forceful on tapes as they are with an audience; hence, this, too, becomes a problem which in turn leads to the problem of orientation of the recorded personality to the problems (and possible solutions) which are unique to correspondence study; (13) the problems arising from getting materials and kits sent out at the proper time and in usable condition ties in with the problem of getting them back from the student and getting them back on time and intact. These are perhaps the areas which present more problems than any area other than; (14) problems of general production. Preparing the materials, editing them, assembling, shipping and checking the returned materials can easily use up the time available so that one person can justify his position in terms of only one course. Perhaps this is a slight exaggeration; however, the sub-groups reached a consensus of opinion in stating that problems of production and administration are the chief handicaps to be met when attempting to incorporate the audio media into correspondence study situations.

Three comments seem to summarize the groups' feelings concerning the problems involved in utilizing audio media in correspondence study courses: (1) "Avoid feeling you can do everything by talking"; (2) "The problem of having recorders (equipment and materials) available still persists"; (3) "It may be cheaper to erase and re-record than to check for student erasures as it's really a time consumming process."

Despite the problems noted above, the sub-groups itemized the following ways in which audio media have been used in correspondence study situations: (1) to introduce the teacher and/or the student by having him use the audio media to record biographical information; (2) recording dramatic presentations to present the flavor of the work; (3) in music appreciation courses to allow the pupil to detect the differences being discussed; (4) as an integral part of the assignment wherein the pupil records on audio media rather than on paper; (5) as a supplementary or enriching vehicle to allow the teacher to elaborate and/or present further explanation of the subject matter he is teaching; (6) as a testing device wherein the pupil is evaluated on his grasp of concepts or principles being taught; (7) to give the pupil a greater feeling of personal participation and involvement by giving him a literal "chance to be heard"; (8) as a summarizing device wherein the teacher can present a capsulized review to the pupil; (9) to bring in new, unusual, outside sources which wouldn't be available to the pupil with utilization of the audio media; (1) in teaching foreign language pronunciation and enunciation; (11) as Tele-Lectures which allow the teacher to tape his presentation, present it to the "class" and then later have a question and answer period with the "class." The Universities of Omaha and Wisconsin and Stevens College have experimented with this; (12) "one way" utilization wherein the pupil can only play-back—he cannot record for teacher play-back. Since the cost of adding recording mechanism is considered non-prohibitive the general feeling evinced at this workshop was to include both rather than only the one way; (13) in the realm of compressed speech, which allows the teacher to play back the recording at a speed faster than that at which it was recorded. Here, again, problems arise concerning tonal quality, comprehensiveness and wear and tear on the instructor. It was reported that up to thirty minutes of compressed time listening is feasible; more than this becomes tiresome; (14) as a loan to public schools and/or public libraries within the immediate vicinity of the student to assure him that he will have equipment available. Such ventures have ranged all the way from depositing units at the library to outright use of the libraries' equipment. Unfortunately this area has not been explored enough to pass judgment on it; (15) the recording of the regular class sessions which the course writer teaches and the use of these recordings as a guide in developing the correspondence course; (16) "pictures with accompanying audio tapes... used in the medical field"; (17) "... to encourage the use of tapes by subsidization of audio media courses." The consensus of the subgroups was that too few institutions have done this; finally, (18) "... to avoid dry, boring presentations by using dramatizations, music and conversations involving important personalities." If one will only let his imagination soar, it becomes evident that audio media, in this person's mind, can be used effectively to enliven, encourage and inspire students in any course. Is this not the case?

The following quotation best exemplifies the opinion of the participates at this workshop concerning current uses of the audio media in correspondence study:

"People should not try to replace reading by the audio method, nor the audio method by reading. They both have a definite place in correspondence study. They both should be used to supplement the other."

Projected Media

WESLEY C. MEIERHENRY

I am pleased to have this opportunity of visiting with you about an area of education which I feel is most significant. With the need for re-education and retraining of large numbers of people, I feel strongly that some other means must be found than of bringing these masses together in formal classroom settings. Therefore, the use of correspondence study as a means of both general as well as vocational education will increase in significance in my opinion. The reason that I am intrigued by the theme of this conference is that I sense that many of you have a feeling that just more of the same type of learning material ordinarily found in correspondence courses might not be the answer to the problem. Rather, there is an indication that if home study is to help meet the challenge for developing new skills, understandings, appreciations, and attitudes, new techniques and methods must be utilized.

I am very much aware of the fact that I am talking to a group of educators who have been heavily, if not almost exclusively, oriented toward the printed word. I have great confidence in the printed page as a means of communicating ideas under certain kinds of circumstances. After questioning some of your colleagues by mail, I must confess that I do not have the confidence which a few of them seem to have in the verbal approach to learning as a wholly adequate means of communication.

I would hasten to say, however, that I do not take quite the extreme view which my colleague and good friend, Dr. James Finn, took last February at the annual meeting of DAVI at Miami Beach in his presidential address entitled, "The Tradition in the Iron Mask." In this address he said, for example:

> It is not easy to understand this attitude of the literary tradition as it wages an eternal war on the audio-visual tradition. One would expect that all of the means of communication, no matter what their form or purpose—a sonata conveying a sense of nostalgia, a sonnet singing of love, a sonar beam carrying intelligence of an underwater obstacle, a sound wave riding with a television frequency—would be respected for their potential to communicate fact and feeling in a complex, essentially uncommunicative world. But it is not so with literary tradition. The literary tradition, in fact, says: there is but one God and it is the Word; there is but one human and he is the man with literary sensitivity; there is but one world, and it has been printed on a press for all to see. Everything else is either a false God, an inhuman man or a phantom world. This is the literary manifesto.

I do not share either, quite, the enthusiasm expressed in the following statement:

> I should say that in years to come, textbooks as the principal medium of teaching will be as obsolete as the horse and carriage are now. I believe that in the next years visual education—the imparting of exact information through the motion picture camera—will be a matter of course in all of our schools, and that the printed lesson will be largely supplemental and not paramount.

You all, no doubt, recognize this quotation as coming from a statement made by Thomas Edison, the inventor of (among hundreds of other things) a motion picture camera.

Having worked in correspondence study for a number of years, I can appreciate your devotion to verbal symbols and their usefulness in learning. As one who also has worked with visual and auditory symbols for a considerable period of time, however, I believe that there is a place for their use also in the learning process. I feel, as Childs and Wedemeyer indicated in a recent publication, *New Perspectives in University Correspondence Study*, that:

> Much experimentation and research is still needed in the search for the most effective way of combining the mass media (TV, radio, films, and other audio-visual devices) with the individualized, tutorial methods of correspondence study. The possibilities are so great, however, and the need throughout American education so pressing, that there is clearly an obligation for television, radio, and audio-visual specialists in education to join as quickly as possible the correspondence educators to hammer out new techniques.

Reasons for Using Audio-visual

The reasons for using audio-visual materials in education generally have a long history. A quick survey of educational theorists and philosophers, who believed that a variety of experiences were necessary for learning, would include such people as Socrates (his Socratic method is right now receiving much attention by those working in programed learning), Comenius, Rousseau, Pestalozzi, Herbart, Dewey, along with many others. With the rise of audio-visual specialists in the last 30 to 40 years, the rationale given has generally been that of the need to have concrete experiences as contrasted with more abstract activities. Such a model, for example, as Edgar Dale's "cone of experience" has become widely known—not only in this country, but even around the world—as I have found from talking with educators from over the globe. Such conceptual devices as the "cone" are very useful to help teachers and other educational practitioners to have a fairly simple and easy reference scheme as a basis for their selection of instructional materials.

In addition to the efforts of audio-visual people to develop functional explanations, recently there has been increased activity to bring together learning theory and audio-visual utilization. Among these attempts has been one for which the speaker has had considerable relationship. Various psychologists working in the learning field, representing differing points of view in terms of their explanation of learning phenomena, were asked to state their theories and the implications for learning and the use of audio-visual.

The unusual feature of these papers to the speaker was the amount of agreement as to the general outline of how learning takes place and the minimum of major disagreements. All of these various learning theorists accepted the general paradigm of stimuli, a mediating or structuring activity, and a response. Depending on whether it was the S-R stimulus response theorist speaking (in which case somewhere attention was given to the stimulus) or the Gestaltist (in which case more attention was given to the mediating or structuring activities) or the Skinnerian (in which case greater attention was given to the response) or the classical association (in which case major attention was given to interference, particularly at the vicinity and structuring point), there were emphases put at different places in the model. The reason for citing these examples is to indicate (1) that there is a new and vigorous attempt to spell out the science of human learning and (2) that all of these people recognize the complexity of the learning process and the place of various stimuli. The point which these theorists make to a greater or lesser degree is that the use of audio-visual material may be useful at all three points: namely, in presenting the stimuli to encourage and motivate learning, in actually structuring the experience to make it more easily assimilated and understood by the learner, and even in the response phase where it might be desirable to use ways of responding other than verbal, depending upon the nature of the outcome desired.

It is recognized that correspondence study represents a somewhat different approach to education. Yet, it would appear that the methods and techniques used must certainly be related to the same pattern of learning which pertains to other formal educational activities. If correspondence study courses were taken only by those people who are highly motivated and in areas in which they already had some familiarity, the use of audio-visual materials might be less necessary Even then, however, there would appear to be evidence from the field of learning that would require other stimuli and activities than verbal ones alone.

In the beginning of this paper, the point was made that in the future our society will find it necessary to call upon every known means of education to retrain and re-educate millions of people. This will mean that many of these individuals will have had limited or no previous contact with the subject matter which they will be expected to master. With little if any disagreement, those people involved in the science of learning are in accord that a variety of carefully designed learning activities must be presented if meaningful learning is to take place. With this background as to why I believe in the need for the use of audio-visual materials, I shall proceed to the main body of my presentation.

Current Status

The theme of this morning's session is "Current Uses of Audio-visual Materials in Correspondence Study." In order that I might present something other than my own hunches or guesses in regard to the present status of projected media in correspondence study, I decided to contact those institutions offering correspondence with a request to report their present usage of audio-visual materials. A questionnaire was sent to 52 institutions. Replies were received from 47 of the 52 correspondence study centers contacted, a return of 90 per cent. Of the 47 reports, 22 indicated that they were making some use of audio-visual materials. The questionnaire referred to audio-visual materials generally, rather than projected materials, which is the specific topic of my presentation. If I had limited my inquiry to only projected materials, the number of positive returns would have been much less.

When it became evident that there would be a considerable number of negative responses to the use of audio-visual materials, the speaker determined to try to identify the reasons why use was not being made of materials other than printed in the conduct of correspondence courses. If the reasons could be secured for AV nonuse, it was felt that these reasons might represent one of the more fruitful findings for use at this conference.

Of those who answered affirmatively, the first question asked was in regard to the courses in which audio-visual materials were being used. The table below is a summary of the responses.

TABLE I

Areas in Which AV Materials Are Used	*Number of Institutions Using*
Language (including English and journalism)	19
Science	10
Fine Arts	9
Education	2
Mathematics	2
Social Science	1
Vocational	1
Humanities	0

It is interesting to note that little use of audio-visual materials is being made in social science courses. In view of the many materials which are available in these areas by various producers, it is somewhat surprising to find so little use being made of them. It is also worth while to note that the language area, which included foreign languages, did make extensive use of various audio-visual materials.

It might be apropos to include here an excellent discussion of the types of audiovisual materials used and the subjects in which they are used as reported by the University of Chicago:

> Since I believe that my remarks do not quite fit your questionnaire, I take the liberty of writing this note instead.
>
> Our general view is two-fold: We use a/v devices to whatever extent is necessary in a given course to insure that the learner has sufficient learning experiences to meet the course objectives. ALTERNATIVELY, if we feel that the c/s format does not permit the use of sufficient devices (a/v, laboratory, or whatever) to provide a sufficient learning experience for the educational objectives sought, we don't offer the course.
>
> We do not use any unusual or special equipment; rather, we restrict our use of a/v material to easily-supplied items (e.g., records, maps, pictures, diagrams, etc.). We use no single administrative procedure in handling these various items, but adapt various procedures, as appropriate, to specific courses.

Thus, in a number of courses—where the text material seems insufficient—we include charts, diagrams, maps, illustrations (line drawings or photographs), art reproductions, etc., in the syllabus or study-guide.

In our beginning college Spanish sequence (Spanish 101, 102, 103), we ask the student to buy a set of records and accompanying text (Thompson & Berumen, SPEAKING AND UNDERSTANDING SPANISH) for practice in pronunciation. As an option, registrants may also read portions of various texts onto a tape and submit the tape for criticism to the instructor. (The student is responsible for providing his own tape recorder and tape.)

In another course, on art, we found no single work to include all the reproductions of art works the syllabus author wished to discuss, so we have made up a selection of reproductions (obtained from commercial sources and museums), which we ask the student to buy. In other art courses, small collections of University Prints are used to supplement textbooks; again, we ask the student to buy these Prints, along with his texts.

We do not offer any courses in which the use of motion picture films are necessary, although I can see their usefulness in offerings of other institutions.

My general view is that c/s is most useful in subject areas where the learning can be accomplished primarily by reading and writing (including mathematics). This, it seems to me, is the essence of the method. A/v or other nontext materials (including laboratory experiences) need to be used to the extent necessary, but I see no *necessary* virtue in combining the c/s and a/v media, except when the subject at hand demands both.

An observation is that either institutions are making extensive use of audio-visual materials or they make no use of them. For example, the report from the University of Wisconsin showed the following:

13 courses—use TV for laboratory type experiences (both audio and visual enrichment).

25 courses—use special visual materials: maps, etc., (not merely illustrations, which appear in most of our courses); also 2 x 2 slides to be looked at through hand viewer.

6 courses—kits of materials: rocks, etc.

20 courses—phonograph LP recordings, tape recordings.

Large number of courses using motion pictures as optional learning aids.

Along the same line is a report from the State University of Iowa shown as Appendix A. There are the above institutions, and others, which purport to make considerable use of audio-visual materials.

The next question dealt with the kinds of audio-visual materials actually being used. I hope the other members of this morning's session will pardon me for overlapping with their topics because of my inclusion of various kinds of media in addition to projected ones. Table II, as shown below, indicates the use of the various kinds of media.

TABLE II

AV Materials Used	*Number of Institutions Using*
Records	17
Lab kits (and collections)	11
Pictures (including art reproductions)	9
Motion pictures	4
Films and Slides	3
Tapes	3
Maps	2
Graphs	1

This table shows the minimal use which is being made of projected materials. The first two categories of audio-visual use, namely records and collections and laboratory kits, are nonprojected. Even the third highest use of material was that of pictures—including art reproductions which generally were not designed for projected use, although they may have been. Table II shows that only four and three use of motion pictures and film strips and slides respectively are indicated.

In some institutions television has been considered as a very desirable adjunct to correspondence study, an area covered by an earlier speaker. As indicated above, at the University of Wisconsin extensive use is being made of television. In such states as Oregon, television serves as the "audio-visualizing" influence. The Extension Division Information (bulletin) for the fall of 1961 included the following descriptive material:

> A living-room chance to study and earn college credit is the opportunity the College of the Air offers to many Oregonians who find it impossible to attend classes on a campus. The many more who aren't particularly seeking credits but find college-level stimulation exciting can look in on a course when convenient or can follow a course and read the text.
>
> Interest is high in the telecourses. During the past five months alone some 500 inquiries have come into the Salem office of Mrs. Dora Prentiss, effervescent director of the College of the Air program. Most of the

classes now offered are for undergraduates—in the fields of literature, science, the social sciences. Those given during the daytime hours are followed by many students regularly enrolled on the campuses of the State System of Higher Education colleges and universities—and by eager housewives who arrange their work schedules and the children's naps to leave them free for 50 minutes of absorbed concentration. The evening classes are telecast mainly for people who are studying for their own enjoyment and satisfaction.

Admittedly, TV is a most important adjunct to home study materials, but the range of such service is obviously limited to students who live in the geographical areas within the range of a television station. Therefore, there must be other avenues for presenting nonverbal experiences to learners.

From the speaker's point of view, one of the more encouraging aspects to the replies received was those responses in regard to the purposes for which the material was being used. Some suggestions were made, such as basic or direct instruction, enrichment, etc., but those reporting were left free to indicate the reasons for incorporating the audio-visual experiences in their courses. Table III shows these responses.

TABLE III

Purpose for Which AV Materials Are Used	*Number of Institutions Using*
Direct	25
Enrichment	7
Supplementary	1

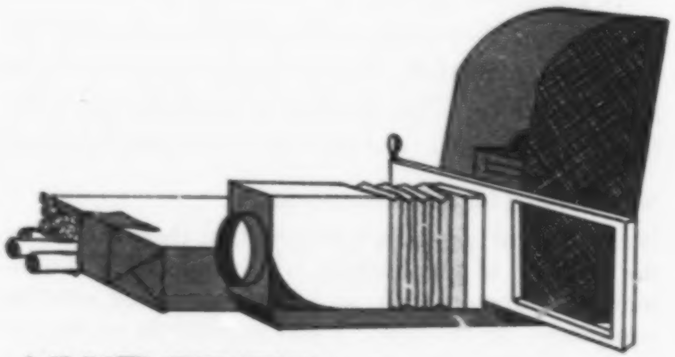
By far the greatest use of the material was for direct instruction with such purposes as enrichment and supplementary uses being in the minority. In regular formal instruction so many teachers and administrators purport to use audio-visual materials for enrichment or supplementary use. The feeling that the AV materials contribute to basic instruction probably leads to their better integration into the correspondence study course outlines and their more direct contribution to instructional objectives.

A final question asked the users of audio-visual materials was how the material was made available to the students. It would be obvious that the problems of availability of materials and equipment would be a greater problem to the home student than to the one in a formal classroom. A further problem is that of cost. Since it is likely that many correspondence study students are limited financially on what they can spend for instruction and since tuition rates for correspondence credit hours are generally equal to or above residence study, it would seem reasonable that students would not expect to pay large additional sums in order to secure needed instructional materials. Table IV indicates the way in which materials are made available to the correspondence study student.

TABLE IV

How AV Materials Are Made Available	*Number of Institutions Using This Method*
Loan (with or without fee)	18
Purchase	13
Collections from local environment	2
Integral part of correspondence material	2

The above table would seem to indicate that audio-visual materials are generally an additional financial burden to the student. This conclusion can be reached from noting that the number of cases reporting necessity for "purchasing" on the part of the student are nearly as great as the cases where "loan" is indicated. Even in the case of loan, many instances were reported where a fee, which might amount to a rental fee, is charged. In only two instances was audio-visual material indicated to be a part of the resources made available to the student without additional charge.



MINIATURIZATION—
SMALL AND LIGHT-WEIGHT SLIDE AND FILMSTRIP PROJECTORS

The State University of Iowa reported, for example: "In order to encourage use of AV materials, some fairly recently revised courses offer use of such materials without the usual rental fee. The student pays only the postage charged." Brigham Young University favored student purchase because, they reported, "loan or rental basis is not satisfactory." Brigham reported further:

> We have used tapes for language courses, but few students have tape recorders and rental of one is very high. Tapes were to be returned by the student, but in most cases they were not returned. The exam was to be recorded on a tape, but the student could not take the tape recorder to the place for the examination.
>
> We found that audio-visual materials were expensive and the cost to the student was so high that the number of registrations for the course were limited. Cost for the Audio-visual Department to make up tapes or phonograph records to fit each particular course was prohibitive. These were not used in large numbers, so they were therefore very expensive to us and to the student.

The University of Wisconsin stated:

> In general, printed materials are incorporated into study guides and then not charged for. If supplementary volumes of charts, diagrams, blue prints, etc are needed, sometimes we charge extra for these.
>
> We have loaned phonograph records and tapes, but are switching slowly to a sale policy.
>
> Motion picture films as supplementary aids are usually optional to the student. He borrows these and c/s pays the audio-visual bureau for rental for the student.

Thus, some of the problems and difficulties in making the materials and equipment available to the students become evident.

Reasons for Not Using Audio-visual Materials

As indicated earlier, a follow-up questionnaire was sent to those institutions which reported "no use of AV materials." Reports were received from 23 institutions. The general comments are very interesting and a number are indicated below.

No real need for it with our courses.

Have thought, perhaps wrongly, that there would be the problem of the student, who would not have essential equipment. We had not considered sending equipment. In actuality, I was in error in saying we used nothing. We use records for the foreign languages, obtaining them from the University of Nebraska.

Difficult to get instructors to prepare course outlines incorporating the use of AV materials.

The main reason we have not resorted to visual aids is the problem of getting our courses adjusted to accommodate the visual aids.

At one time these materials were used in Spanish, French, and German. Frequent revision of courses, with a change of AV materials, makes the cost almost prohibitive.

Courses are academic in nature and can be completed successfully by reading and studying alone. Cost is too high since ours is a small operation.

Our attention is closely focused on self-support methods. Therefore, I have little to say at the present about the development and use of AV materials.

Budget reasons—you can get only so much blood from a turnip. I'm sure we would all like to have all the materials available to help out in our correspondence.

The use of television is a matter of great interest to us. However, we are in a very preliminary stage of predevelopment. I am also interested in possible use of programming techniques. But I haven't had sufficient time to develop this as yet. We did use television as far back as 1955—but we were an appendage to a noncorrespondence designed film.

The subject of using AV materials has never been considered. The difficulties of getting these materials to students, together with the expense of the program, would probably be our reasons for not using such media.

An increasing number of our students are living out-of-state and some in foreign countries.

So far as answers to specific questions are concerned, the following is the summary:

TABLE V

Reasons for Nonuse of AV Materials	*Institutions Responding*
Feel that cost of developing the material and/or equipment would become too great for student	11
Feel that the bulk and/or cost of shipping material would become too burdensome	9
Find it difficult to find suitable portable and low-cost equipment which might be needed to utilize AV material	8
Do not consider audiovisual materials essential	7
Find it difficult to develop or find appropriate AV materials	4

Although only seven institutions indicated they did not consider the use of audiovisual material essential, the statements indicated above would appear to support the idea that many more than this number really questioned their usefulness.

The speaker has no desire to question the appropriateness of the responses, although the four institutions, who found it difficult to develop or to find appropriate AV materials, seem like a very small number. My own experience has been that —with what seems to be a mass of material available—there is still not a large quantity of college-level projected materials which are directly related to instructional objectives within specific courses. If institutions are really serious about locating audio-visual materials for their correspondence courses, it is my opinion that they will be quite disappointed at the results of their investigations.

It is easy to understand the relative amount of weight given to the difficulties of obtaining or locating suitable equipment, the cost of developing the material and/or equipment, and transportation factors. Postage costs are already a sizable item—and may go higher. Further, although most homes now have electricity and other similar conveniences, the portability and suitability of equipment is certainly a critical factor. Some of these problems are related, in fact, to more widespread use of audio-visual materials in formal classroom settings. It may be that more efforts ought to be given to achieve some major breakthroughs in equipment design and portability for classroom as well as for individual study.

The speaker regularly receives the UNESCO documents and in December received "Report of the Meeting on Educational Broadcasting in Tropical Africa." Among the reports was one made by Bernard Lucas, the Director of Radiodiffusion of the Republic of Niger, on the use of printed and visual materials in connection with radio programs. It seemed to me that the techniques which Mr. Lucas described for reaching learners in remote areas might have some application to our problem here. Lucas describes, for example:

> The process called "radio-vision," which makes a simultaneous use of a sound radio programme and the projection of a film strip, of which each picture explains a sound sequence—and vice versa—is an experiment in synthesis which seems to have particularly interesting possibilities. Its low cost, the fact that it can be used in any part of the country by means of kerosene-operated projectors, the speed with which programmes can be produced and broadcast—these are some of the arguments in favour of this process, which seems suited to the present economic conditions of the African States.

He also described the use of "cultural kits" as follows:

> . . . these include for a given subject all the audio-visual material (books, gramophone records, film strips, tape-recordings, photographs, etc.) that may be needed, either by the programme producer, for radio or radio-vision programmes, or by the lecturer, the teacher or the director of a cultural centre.

Your speaker has extensive documents which he requested from UNESCO on these projects and had hoped to have demonstration materials available to show what can be done with limited local resources. Certainly this type of activity has implications when equipment and material loom as such large obstacles to the use of audio-visual materials in correspondence study.

Summary and Conclusions

The purpose of the presentation has been to probe the current use of audio-visual materials and, more specifically, of projected materials in correspondence study. The general conclusion which can be reached from the information received by the speaker is that their current use is almost nil. It would appear, assuming the use of audio-visual materials is worth while in individual study, that the area is a wide open one for exploration, study, and experimentation.

That section of the study dealing with the reasons why materials were not utilized included in some cases a change in attitude, in others the development of new material and/or hardware. The reasons for nonuse represent in some cases formidable barriers, but in no case do the remedies seem outside the possibilities of solution.

APPENDIX A

Summary of Audio-Visual Materials

BUREAU OF CORRESPONDENCE STUDY—UNIVERSITY OF IOWA

Course Numbers & Title	Devices Film	 Film Strip	 Taped	Purpose	Available	Cost (Rental)	Notes
42:187 Introduction to Public Welfare (2 S.H.)			2 Lec.	Enrichment	Bureau of A.V. Instruction	.60 per tape	
34:135 The Community (3 S.H.)			1 Lec.	Enrichment	″	.60	
34:120 Personality (3 S.H.)			2 Lec.	Enrichment	″	.60 per tape	
31:152 Occupations and Vocational Psychology (3 S.H.)	10			Enrichment	″	Carrying Charge Only*	
31:106 Abnormal Psychology (3 S.H.)	24			Enrichment	″	Carrying Charge Only*	
7:198 Analysis of the Individual (Guidance) (3 S.H.)			10	Enrichment	″	.60 per tape	
7:152 Supervision & Teaching of Language in Elementary School (3 S.H.)			1	Optional—overview of course	″	.60 per tape	
30:7c Iowa Government (2 S.H.)	1			Optional—shows legislature in session	″	$2.50	
7:96 Introduction to Education (3 S.H.)	19	3	6	Enrichment	″	Carrying Charge Only*	Student chooses from listed films
3:175 General Semantics (3 S.H.)			6 Lec.	Enrichment	″	$1 for 2 lectures	
3:176 Speech Pathology (3 S.H.)	9			Instruction	″	Carrying Charge Only*	(Alternate assignments include questions based on films)
35:1 Elementary Spanish (3 or 4 S.H.)			1	Enrichment	″	.60	
13:1 First Year German (3 S.H.)			1 Intro.	Pronunciation help—optional	″	.60	
31:3 Elementary Psychology (3 S.H.)	24			Enrichment	″	Carrying Charge Only*	Films for each lesson
25:1c Fundamentals of Music (2 S.H.)			4	Ear Training-Optional	″	$1 per tape	
22:3 Intermediate Algebra (Programmed Course) —See description on Attached Sheet							

First number indicates department. Courses with numbers below 100 are undergraduate courses. Courses with numbers above 100 provide either graduate or undergraduate credit.

* In order to encourage use of A.V. materials, some fairly recently revised courses offer use of such materials without the usual rental fee. The student pays only the postage charge.

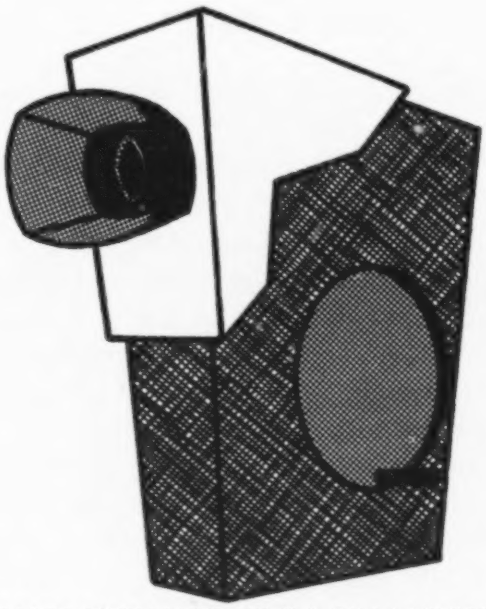
DISUSSION SUMMARY

Projected Materials—Current Uses

This period we are interested in the current uses of projected materials which are being used in correspondence study courses. First, we should define what is meant by projected materials. To get us on a common basis let us consider projected materials as motion pictures (films), film strips, slides, all materials which we look at through viewers, and transparencies when used with overhead projectors.

There are a few institutions using projected materials. From a pre-conference survey six colleges or universities reported the use of these materials in their courses. The University of Utah is using them in the area of art. The University of Georgia has made these materials available to their students but the students have not taken advantage of them because of the projector problem. In addition, other schools have made films available on a loan basis.

The normal use of projection is considered better than the use of flat surface because of the element of motion and the enlargement of what is being projected. Projected material is essential for enrichment of learning experience and it is our responsibility to include adequate instruction for the use of these media. This instruction would be a part of the learning of the content.



HAND-OPERATED 8MM FILM VIEWER

Projection will take written words to explain, or it could be done through some audio media. Primarily the explanation would be in writing. Students who use these media to enrich their learning experience will continue to require them and use them in later learning experiences. Students who learn entirely from the written word will continue to study this way. We need to present our courses to satisfy both types of students and give them both the best in their learning experiences.

Projected materials is fine and certainly we would like to utilize everything we can but it takes much time and we have trouble getting people to develop courses now. Also there is the matter of money in developing courses with any form of audio-visual aids. The cost is not alone in the developing of the materials but in the equipment and shipping.

Motion Pictures

Motion pictures are not new in correspondence study, they were used twenty-five years ago but because of the expense and other faults they were not used extensively. One main fault was in the development of the course, they were not developed as one project but as separate projects. Films are primarily for a mass media or for group learning, this would seem to indicate that they would be more adaptable for group study procedures in correspondence study.

Motion pictures have many advantages and maybe it is time we took another look at their potential, especially since we have many new innovations in both the film and projector. The use of motion pictures needs to be studied. Six institutions are making films available to their correspondence students, on a rental basis, or paid for entirely by the school.

Students do not seem to be interested in the films especially when they are not required for completion of the course.

The cost and time involved in making the film, the cost of already prepared films, the problem of securing projectors, and the problem of projection itself are the major difficulties encountered at the present time in the use of motion pictures in correspondence study courses.

With the new innovations and uses of new films and small inexpensive projectors to be discussed at later meetings, we should seriously consider their uses in correspondence study courses.

Slides

The use of slides over bound pictures for the student was considered because it is less expensive to mail slides than pictures, and less bulky. Another advantage of slides over pictures is that the student will have an opportunity to get with other students to discuss the slides and will therefore encourage them to use them.

In the instruction of geography and geology, we are thinking about having small slides and a small projector which can be sent out for correspondence study courses. This could not be done if one or only a small number of institutions used it.

Is it not sometimes cheaper, for some particular thing, to have it made up in two-by-two slides and then have it reproduced? In many instances it would not cost too much.

There are viewers available to the student for two-by-two slides. There may be an advantage in hand viewers because of focusing attention at isolating him but just isolating him at the task and not from other students.

Transparencies

Transparencies when used with the overhead projectors practically eliminates their use for correspondence study students because of the problem of securing projectors. Overlay transparencies may be used without projectors which take them out of this discussion.

The University of Iowa has developed a good inexpensive viewer which will make transparencies a useful part of correspondence study courses. More about this at later meetings.

Filmstrips

This was an area which is not being utilized to any extent. More needs to be done here and more information needed.

Summary

When we talk to the professors about setting up courses, I would like to have them include more of the aids, especially in the revision of courses. A narrator could discuss the course content plus the inclusion of all these other ideas.

We are going to see many more instructional establishments which will consider other means of teaching outside of the printed word. Text films was one of the initial starters. In the early 1950's pictures and graphs were used to dress up the books, but were not necessarily related. Major book companies are now producing film and other related material with their books. In addition, there will be a whole series of testing materials available with the textbooks.

This discussion on projected material will be brought up tomorrow and cost will be discussed. Many features of the various machines will be given so that you will not be discouraged. Let us look forward to tomorrow.

Graphics and Manipulated Media

JOHN L. DAVIES

After having these distinguished and fine presentations as you have had, I find myself playing a rather unusual role. I am the one representative here on the front row of speakers who is among those who are busy working on the data for adult education by correspondence study. Perhaps my presentation will be more in the way of an address to those in the field of correspondence than otherwise, revealing to you some of our problems and of our attitudes and needs.

Most of us have been getting an inordinate number of questionnaires lately which I suppose means that this only proves that none of us know what is really going on! I was not sure about the topic, "Graphics and Manipulated Media," and it took a bit of thinking before I could figure out just what this might involve.

"Graphic" in Webster's New World Dictionary is indicated as belonging to painting or writing, Graphic Arts—printing, graphs, diagrams "describing in realistic and vivid detail." Synonyms pictorial or vivid imagery. This provides a great deal of latitude and I should judge that "manipulated media" might include the consideration of any medium of expression that would involve handwork or physical adjustment.

Without benefit of any special directives it seems good to put in a few limitations and consider the possibilities of (1) how do we prepare and present our offerings such as syllabi, the covers, the format, the content, supplements of one kind or another; and (2) what we do to provide imagery for the student.

If I read this splendid conference program correctly it is not planned that this particular session should give itself over to offering suggestions as to what might be, but rather to what already *is*. I do trust, however, that there may be room in such a presentation for a few suggestions that arise out of the consideration of what is already going on.

The findings as a result of a simple inquiry to which so many of you promptly and kindly sent replies are listed for you here as follows:

Summation of Reports

Graphics and Manipulated Media

Department	34 *Univ.*	
Art	6	pamphlets, illustrations, slides, kits
Agriculture	5	pamphlets, illustrations, charts, tables, diagrams, kits
Education	5	illustrations, pamphlets, tapes, films, slides
Mathematics	6	diagrams, kits, charts, drawings
Engineering	7	illustrations, drawings, kits, diagrams, charts, data sheets, pamphlets
Language	9	records, tapes, charts, kits
Social Studies	17	maps, pamphlets, charts, illustrations
Science	11	maps, diagrams, charts, kits, chemicals, slides
Other	10	charts, kits, illustrations, diagrams
Not Listed	6	graphs, charts, maps, slides, kits, films, illustrations
Colored Pages	6	Used for: test requests, assignments, instructions, reading lists, questionnaires

4 replies listed no graphics or manipulated media—16 schools–no reply

What does this summary show?

In the main—few surprises!

We have *all* been doing much the same thing in a rather unimaginative way.

Maps, charts, kits of supplies, packs of art prints,

Let's look at our points:

1. How do we prepare our offerings?
    a. In much the same old way!
        1. Ask a prof or department for a course.
        2. Take the outline as received (and give thanks if it shows a bit of commendable originality–curses if it is a mess.)
        3. Set it up in lessons as per usual–with bits of information we need to add.
        4. Arrange for references, library use and a *bit* of promotion.
        5. Print it on hectograph, mimeograph, or more recently off-set press.
        6. Sent it out a few lessons at a time or more recently, under one cover–sedately conservative!

I can recall that the readers that I used to have in school were rather dull in appearance and I can also recall that the readers which are being brought home from school at the present time are things of beauty and marvelous entertainment with color, spacing, photographs, and many other evidences of lively, spirited consideration for the reader.

This same conclusion comes when we think of how we are presenting our courses. We *can* say that the preparation is a matter that belongs to the academic side of our organizations and that by and large it is simply a presentation of notes and suggestions that would give the student guidance in the studies that he will be using. Perhaps he will find life and interest in materials and textbooks that are mentioned.

Our cover stocks are occasionally showing signs of enlivenment but by and large are very proasic.

Our format is much the same from one place to another and offers little real suggestion of student interest. Supplemental materials are in the main assigned to the particular area of activity and to a very limited degree.

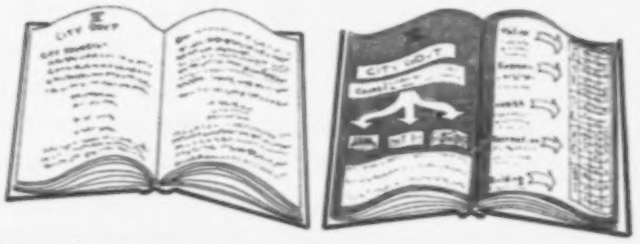
And the answer that comes up often times is "well, this kind of material is available through other sources and it is not a part of our function to provide these things; they can find them in the texts or elsewhere."

The interesting thing is that maps are supplied with courses that have to do with maps and charts. It is the same with symbols that belong to mathematics or formulas to the sciences, but there is very little evidence of maps being introduced into a philosophy course or formulas into a history course or maps into a music course.

This idea is intriguing although at first glance this seems to be somewhat ridiculous. But I offer the thought that perhaps it wouldn't need to be entirely ridiculous, that perhaps an educator is not one who lectures and gives examinations but rather an educator would be one who offers light in dark places and that it might easily be possible for us in various ways to stimulate thinking by the use of materials which have first of all stimulated us.

Certainly education should not be intellectual taxidermy in which we scoop out the mind and stuff in the facts because that in itself becomes rather worthless. It is well to realize that correspondence grades and education are not synonymous, but a great deal could be done to bring them closer together.

The particular point I am making is what do we do to provide imagery for the student? The answer, bluntly, "Very little!"



THERE'S ROOM FOR GRAPHIC IMPROVEMENT IN MOST STUDY GUIDES

One of our questionnaire responses offered by a good and thoughtful friend raises the question of whether or not this is the place for various types of incentive materials, whether or not we should try to surround our materials with various kinds of "hoopla" and involve the process of spoon feeding, instead, the student's purpose is to *learn*. If he is bent upon doing so he will learn best if he works these things out for himself and there is no particular reason why we should try to excite him to greater efforts by the use of various kinds of imagery.

I wish to take issue with that point of view. Not in terms of the things that we have ourselves accomplished but rather in terms of what I think needs to be done and on which we intend to work. Paraphrasing Van Bortel in the *"Education Digest"* I might say that if correspondence programs are to take their place, education must be brought to the general public with a small part of the vigor and salesmanship that took *Lanolin* off the sheep and put it in the drugstore!

It leads to the conclusion that it is *not enough* to simply purvey the *staples* which provide life and living for education but rather that we should participate in the business of encouraging new concepts and new ideas, that we should demonstrate it by various efforts within our natural limitations to create and to stimulate new thinking and new enthusiasms.

We have already heard stories, of course, such as the one where the young lad said that his sister was taking swimming lessons but she got a lot of splinters in her hands. And his buddy says, "But how could she get splinters when she's swimming?" "Well, she has just been learning the strokes on a board. She's taking her lessons by correspondence and hasn't reached the water lessons yet."

Ridiculous as that story may sound it nevertheless points up something rather definite and that is that we have been proceeding in a rather stodgy fashion of *presenting ideas*. We have been systematic, orderly and since we sometimes are doubtful whether people should be given too much freedom we give it to them a few lessons at a time but in the main we present "learning" without much evidence of enthusiasm or interest.

(Is this too harsh? It is the same for *me* as it is for *you*. Harsh but true—If I'm going to profit from this conference, I am going to need a hard look at *myself first*—not to justify but to see if I can change my concepts to some purpose!)

I was rather shaken recently when a good friend brough up the topic of "dynamics." This conversation went something like this:

The February 1962 "Reader's Digest" is the 40th Anniversary Issue and contains an article by Robert O. O'Brien titled "Forty Years From Now." The year 2002 is impossible to predict, but the imagination of Mr. O'Brien predicts an average family income of $15,000 in today's purchasing power, sources of energy from the sea, Mach 3 commercial jets, supplies and freight shipped through pneumatic pipe lines, fuel cell cars and individual rocket belts.

The telephone will become the master control unit of the home allowing you to see the person you are talking to, answer the door bell from any room, control appliances and room temperature with voice command—even remotely because all cars will have telephones. Communicable diseases will be under control and man will be in outer space to stay.

The fact is that all around us changes are multiplying at such a rapid speed that we scarcely know what tomorrow will bring. Try to realize that half of the working force of our nation is working at jobs that were not even present in *1950*. That we are all striving for things as they *were* and watching and being a part of things as they *are to be*. That the motivations that impel change are not those of change for change sake but rather for adjustments that new learnings and new problems are creating.

In a large measure we hold to what *is or was* instead of what *might be* until some overpowering condition makes us face up to the changes. The impelling, the driving, the energetic and magnetic qualities that surround all phases of work, *ours* as well as all others, the vitalizing, energizing, activating kind of approach that is taking place in our grocery stores, with the food stuffs and packaging, on our highways, and the inherent dangers involved in our skies with all kinds of vehicles, in our thinking processes that provide the answers to strange and unusual questions and old questions of another day, our manners, our attitudes, our needs for knowledge and our multiple discoveries of things so strange and so different that we are almost afraid to see what combinations will bring new forces to bear upon us.

We are giving thought to fallout shelters in anticipation of possible failures in thinking process in answer to group conflicts while at the same time we trust that it won't take place and we would much prefer to have no part of it.

As I said before this was a shaking sort of a conversation. One that brought home so vividly the fact that the efforts we have been giving to adjustments and change have been minimal, that the amount of detail and paper shuffling as a normal part of our living has driven out the basic consideration as to how well can this be done in terms of the needs of those who can use the service. Instead of bypassing such a thought with the quick and ready observation that, "for us there is really very little possibility" or "I don't have the means" or "there is no great demand," I should be giving thought to purpose and goals. I should be involved in *Dynamics*.

Perhaps you have had occasion to read Margaret Meade, the renowned anthropologist and her article "Thinking Ahead," subtitle "Why is Education Obsolete?"

This is a stimulating and stirring consideration in which it is indicated that although the educational system remains basically unchanged, we are no longer dealing primarily with a *vertical* transmission of knowledge tried and true in which, as for centuries past, the mature and the experienced teach the immature and the inexperienced pupils.

Rather, this is a system of education that developed in an early day but is no longer satisfactory. In the world of rapid change vertical transmission of knowledge *alone* no longer serves the purpose of education.

Margaret Meade points out that what is needed and what we are already moving toward is the inclusion of another whole dimension of learning. The *lateral* transmission of understanding to *every* member of society as to what has just been discovered, invented, created, manufactured and marketed, so that the man who teaches another individual new mathematics or the use of newly invented tools is not sharing knowledge that was acquired years ago but knowledge he only learned yesterday and the student is past ready for learning today.

The emphasis continues under the idea that the whole teaching and learning continuum which once was tied in an orderly and productive manner to the passing of generations and the growth of the child into a man; this whole process has exploded on us and that we no longer can carry the old picture in our minds of education with teacher and student and step by step learning process that may eventually be needed at some *future* day.

Particularly is this true in our own kind of work where we are dealing chiefly with adults who are conscious of their needs and who find that our presentations are tied in the main to slow moving preparation for what may be as was once understood instead of active adjustment to what already is. This of course involves not only our work, it involves all the work of the institutions and the processes of education of which we are a part. Perhaps we are not in position to move out and take the leadership in changing or bringing overall adjustment but we can have no hesitation in saying that as for *us*, in our particular area of endeavor, we should be encouraging and exploring the possibilities of presenting materials in a new and much more vigorous and vital manner than has previously been the case.

We should give attention to the fact that two great new educational agencies have entered into the arena, the armed services for one and industry for another. In a large measure their processes have been geared to the needs and they are bringing to bear patterns of operation that are radically changing the traditional educational outlook.

Unfortunately in most of the schools, as Meade goes on to point out, the pattern itself is scarcely questioned, we think we know what education is and what a good education ought to be and we go along the same pattern that was previously used where it could easily be that our educational system is in large measure obsolescent.

Various universities which are represented here today are already discovering the mobility of population and the demands and needs of the areas in which they serve and they are struggling and wrestling for different approaches and different types of presentations. To use a quote from Meade "is it not possible to think that an educational system that was designed to teach what was known to little children and to a selected few men, after which they could be termed as 'educated' might not fit a world in which the most important factors in everyone's life are those thing that are not yet but soon will be known."

I think a famous quotation from this particular reference that I am using *is*: *"one of the most vivid truths of the new age; no one will live all his life in a world into which he was born and no one will die in a world in which he worked in his maturity."* In a large measure the new function that we have to assume is that education is for rapid and self-conscious adaptation to a changing world and that a secondary education, based as it should be on a primary education, nevertheless should be available in any amount and *at any period during the individual's whole lifetime* in terms of the kind of life and living that he is called upon to do.

So much then for such generalizing. It only indicates to you that the consideration of this topic which at first seemed a bit difficult has stimulated for me, at least, the idea that perhaps I should be up and about the business of *educating* in a modern world and not continuing any longer than is necessary the process of ignoring the changed world that we are trying to serve.

And naturally you say how and what can be done? And I don't have very many answers. Perhaps our conference will in a large measure give us many answers, I trust that it will. One or two things that come to mind as I look about for some evidence with which I can conclude this topic including manipulated media would be an illustration or example of adjustments such as I might show here in terms of what some of our group have been doing in an attempt to stimulate through the use of new covers, the change of type forms, the inclusion of pictures as well as the usual maps, the development of spoken word through tapes and the use of the various devices that will come into play during this conference.

Fundamentally the basic courses we are purveying must in themselves be the responsibility of our academic faculties and such changes in the instructional process are not areas of activity in which we can take a primary hand even if we were able to do so.

But we can accept for ourselves the basic responsibility of using all the devices to make the learning process as interesting and vital as our method of presentation will permit and to recognize that in our own small way we can add new vitality and enthusiasm to the learning process that we are so interested in.

I expect you, as will be true for me, might leave this conference with ideas that we can put into being and that we may in a measure be somewhat like the tiny ant that wondered if the sleeping horse would be good provision for the family back home and while meditating upon the problem sipped on the remains of a whiskey bottle. So, with new enthusiasm he grabbed the horse by the tail saying "Come on, big boy, I need you at home." The important thing of course was that the enthusiasm was there, temporary as it might have been. Having turned enthusiasm into resolution we need to make graphics and manipulated media and all forms of new materials in a changing educational world available to the end that we dynamically influence our individual instrution students.

Here are a few examples of current efforts in trying new approaches—only a few—there may be *many* better.

Covers — Wisc—USAFI—SUI—Chicago
Format — rainbow
print type
illustration—FAS—not more able—just more positive motivation
Maps —
Charts —
Kits —
Transparencies — Sample of what some have been working on Demonstration—*Special Kit*

DISCUSSION SUMMARY

Graphics have been considered in the old term, usually as charts, maps, diagrams, etc. Graphics have not been approached in a new or especially gratifying way. This is what we are interested in—to arrive at new ways to use graphics.

Manipulated media seems to be a rather obscure term, but the definition which we will use will include such media as overlays, pictorials, certain types of maps and charts, and kits for laboratory purposes.

The University of Wyoming is using seed packets in one of their agriculture courses. They are an integral part of the course for the identification of various seeds.

The University of North Carolina uses a kit of rocks in geology. This has proven very effective, with one set identified by number and another set to be identified by the student. The instructor gives instructions to the student on how to identify the rocks.

Some schools are furnishing kits for laboratory purposes in other sciences. The University of Nebraska, for example, has had a laboratory kit in a physics course. The University of Texas uses a laboratory kit in its high school biology course. Some years ago The University of Wisconsin became interested in modified experiments which scientists said were quite adequate on the elementary level. From these experiments a small kit was developed for chemistry. There is no evidence that this resulted in any great advance in student achievement but it made a sensible addition to the course.

Overlays are not considered by many as manipulated media but we will consider it in this area. Overlays may be used effectively with or without a projector. In an overlay, the sequence is definite and in some areas you can see what is being emphasized while the other areas of the overlay may be blocked out.

Most all audio-visual departments can prepare overlays. In some instances the production of overlays may be too time consuming for the average audio-visual department. In these cases printing by other sources might be cheaper. Textbook publishers might have overlays available at a very reasonable cost. If purchased from a publisher, they could be bound in with the study guide.

There are only a few companies in the country that prepare overlays except for their own textbooks. Some of these companies are: Millprint Corporation, Ozalid Company; and Tech-Ni-Fax, a new company just coming into business.

Many instructors prefer to make their own overlays. Many may have their own original drawings which will not adapt themselves to cell overlays, each drawing has to be separate. Here is where we must get the instructor and the graphics artist together for professional help in preparing overlays.

The most common use of manipulated media is in the sciences. Architecture, home economics and other arts must have technical expression. An excellently illustrated textbook can give ideas of structures and visual characteristics of the prints, but the pictures do not always give the true impression which the actual structure will give. These will cost some money but the audio-visual people are ready to help design structures and prints which will be at the lowest possible cost.

Graphics are good because they cannot be vague and you cannot be misunderstood when you use them. One important point which is overlooked is the requirement for the student to make his own graphic representation of his lessons.

In preparing a correspondence study course including graphics, the starting point is to have an instructor who is interested in writing a course. Some prospective course writers must be eliminated because they want to write a course for personal reasons and are not really interested in correspondence study. The next step is the discussion of what the course is to be and what purpose it may serve. This initial discussion may involve several professors in deciding what should be offered and how it should be offered.

As the course is being written, it should be examined periodically by experts in the field. This will help to eliminate pitfalls in the course and will insure a course which will be acceptable to the majority of the people involved including students.

As the author develops the course, he should keep in mind the possible use of graphics. If a graphics specialist is not in on the original planning of the course he should be consulted during the preparation of a course when an idea appears for graphic representation. Ideally, the graphics specialist should be a part of the initial planning group but many schools find this impossible. In fact, many extension divisions do not have a graphics specialist available for correspondence study people.

The ideal situation would be to have the audio-visual specialist as a co-worker along with the subject matter specialist and the correspondence study director.

Guide for Use of Currently Available Audio-Visual Media in Correspondence Study

The objective of this particular segment of the program is to attempt to draw out of the contributions of this conference a catalog of specific ideas on which there may be relatively substantial agreement on the utilization of currently available media for correspondence study—equipment and techniques.

In any such discussion, the group process need not be ruled out from the scope of correspondence study (despite the fact that home study is a highly individualized mode of instruction) as there are currently instances where the correspondence study method is being utilized in group situations and the potentialities of such combinations are sufficiently great to indicate that this may be a fruitful field for current experimentation and development.

A first step toward the development of a guide to the utilization of newer media would naturally be compilation of a definitive list of media involved, together with a statement of the characteristics of each medium, the broad working definitions of the various media, why to use these media, when to use them, and how to use them.

After preliminary discussion on the broad outlines of the objectives three task forces were set up—one to discuss and make recommendations with respect to broadcast and projected media; the second, audio and graphics and manipulated media; and third, for programmed learning. Because of the fact that any discussion of present practices with respect to programmed learning is so intimately intertwined with the future, the task force assigned to this problem elected, after brief discussion, to meet jointly with the task force of the discussion groups A and B assigned to the same problem, and to make their report a joint one with that group.

Broadcast and Projected Media

Within the term broadcasting, we include all television and radio as they are now known and used. Thus, this includes educational television, commercial television, closed circuit television, and AM and FM radio.

Within the term projected media, we include motion pictures (35mm, 16mm, and 8mm, silent and sound, kinescopes, as well as ordinary film); slides, including all sizes from the smallest—perhaps viewmaster types—to 3¼ x 4 inch; transparencies of the type for use on overhead projectors (Vugraph, for example) and other devices which permit their projecting and viewing; and opaque projection.

TELEVISION

Definition: A means of electronically transmitting the sight and sound presentation which a correspondence study teacher wishes to make to students who are able to receive the telecast.

Why use television: Television can be used in correspondence study for the immediate visual implementation or supplementation of the correspondence study course and to teach a broad general audience with the cultural and informational experiences.

When to use television: We can use television in correspondence study either to present the basic materials of a course and/or when you wish to add enriching materials of a course which you would, or otherwise would not present in such a course. We use television in correspondence study when that which is presented by television becomes an important and organic part of the course. Thus, within a correspondence study course, we might create an awareness of the importance of watching for enriching experiences via television. In every case, preparation must be made for the proper use of the telecasts.

How to use television: We use television as a credit teaching method and as a cultural, adult, educational device (non-credit).

RADIO

Definition: A means of electronically transmitting auditory experiences which a correspondence study teacher wishes to present to students who are able to receive the broadcast.

Why to use radio: Radio is used because it provides an immediate auditory experience of a nature determined important by the correspondence study teacher.

When to use radio: We use radio when we need immediate broadcast of sound as an integral part of the correspondence study course; when we wish to add flexibility and to keep courses current; when programs are a part of the structure of the course (create awareness of the importance of enriching experiences).

How to use radio: We use radio as a credit teaching method and as a cultural, adult, educational device (non-credit).

MOTION PICTURES

Definition: Motion pictures are a series of still pictures taken at regular time intervals on a long strip of film such that they can be optically projected on a screen to produce the illusion of motion.

Why to use motion pictures: Motion pictures may be used in correspondence study to present basic materials of the course; to enrich the course; and when the total economics and logistics make it feasible.

When to use motion pictures: Motion pictures could be used in a correspondence study course when motion is a basic part of the concept being taught; when it is desired to show certain desirable things; e. g. extremely fast motion, very slow motion, concepts requiring animation, events occurring where human eyes cannot survive to report, when certain problems of time, space, size, and uniqueness need to be overcome.

How to use motion pictures: We would use motion pictures in correspondence study under conditions which have been carefully determined by the writer of the course. Preparation for their use should be a built-in feature of the course.

SLIDES AND TRANSPARENCIES

Definition: Slides and transparencies include glass slides in both the standard and the 2 x 2 size and photographic film both in original positive film and positive reproductions from negatives in 35mm size. In this category must also be included materials of much larger size prepared on transparent background.

Why use slides and transparencies: Slides and transparencies would be used in correspondence study for the intensity and accuracy of their color; for showing detail which can be obtained by projection; for showing visual elements not otherwise available; for showing pictures and such too large to permit mailing; as a means by which a student can take pictures of his activities and submit them to the instructor for reporting purposes.

When to use slides and transparencies: We would use slides and transparencies in correspondence study when this is the best possible means; when necessary to reduce size of pictures to be sent out; when reels cannot be sent out.

How to use slides and transparencies: Projection equipment for the utilization of these materials for the correspondence student working on an individual basis is, of course, a problem. Fortunately, various types of small slide projectors and hand viewers are now readily available at very reasonable cost. A special piece of collapsible equipment, which can be cheaply produced and readily shipped, is now developed and is coming on the market for the viewing of transparencies up to approximately an 8 x 10 size. This particular equipment was, in fact, specifically designed for use in correspondence instruction.

Audio Media, Graphics and Manipulated Media

Recorded materials are currently available in considerable volume for effective presentation to the correspondence student of literary materials of a type in any manner marking the best of instruction for comparison with the face-to-face situation of the classroom.

Recordings are commonly available at 33-1/3, 45, and 78 rpm with rapidly developing possibilities at slower speeds such as 16 rpm. The limitations of the use of records are: (1) cost of originals, (2) easily damaged, (3) difficulty of production, and (4) limited to one-way communication. The major strength is that the record player is the most commonly accessible equipment.

Tape recordings are generally available on two speeds, 7½ and 3¾ inches per second, with the possibility of reduction to slower speeds with equally satisfactory reproduction. The tape recordings offer possibilities of a two-way communication. The combined utilization is desirable in many instances for using either records or tapes in conjunction with projected material.

AUDIO

Why use audio: The use of audio, either records or tapes, can serve to establish early rapport between instructor and student, as well as later to furnish the essential or supplementary material in the course. The use of audio materials (either records or tapes) can be completely essential for understanding in such areas as music, drama, and speech.

When to use audio: These media may be used when essential, helpful, and desirable.

How to use audio: Records or tapes may be produced locally, commercially, or in certain instances, may be available from national repositories such as the tape library at the University of Colorado. (The point made by Max Bildersee with respect to the necessity for coordination of recordings with visual presentations for truly effective instruction, merits emphasis at this point.) If records need to be made by the student, the most likely source of production might be the local radio stations. Tapes have this added advantage of two-way communication.

GRAPHICS AND MANIPULATED MERIA

Definition: The techniques used in producing course books including illustrations, printings, colored pages to identify certain supplementary material, other material sometimes included separately (charts, maps, and overlays); packaged material such as sets of overlays, pictures, and charts; kits of models, mockups, specimens, and other manipulated media; slide rules, rocks, seeds and fabric specimen, etc.

Why to use graphics and manipulated media: These media may be used as teaching devices for greater clarification, purpose of identification, and multi-sensory involvement.

When to use graphics and manipulated media: The same justification for the use of graphics and manipulated media would prevail as above indicated for audio.

How to use graphics and manipulated media: A strong feeling persists as to the desirability of the pooling of resources, not only within institutions, but between institutions. Most important of all is that the team concept be exploited to make such resources as may be available, at any given university, at the disposal of the course writer. This is definitely within the realm of possibilities for immediate utilization provided an adequate inventory be made as to the resources which are actually now present on virtually every college campus in the country.

For inter-university cooperation in this field, the possibility of a project center for graphic materials comparable to the central pool for tapes now operated from Boulder, Colorado, merits careful consideration and exploration.

PART FIVE

Uses of Newer Media in Correspondence Study

Broadcast Media

HENRY ALTER

When I read *The Austin American* this morning I realized how Elizabeth Taylor and Gina Lollobrigida must have felt when they met in Moscow wearing the same dress—because I read the remarks, or at least part of the remarks, made yesterday by Armand Hunter. I have not even seen him at this conference. That is why I was wondering whether he was giving my speech or whether I had confiscated his. But of course, I know that this is a honeymoon enterprise; so, we are not concerned about these things. I may have trouble distinguishing between present and future developments, and it may well be that the criticism after I get through today will be that I have not talked about the future at all but only about the past. Be that as it may, here we are and so I will forge ahead.

There is even more agreement, actually, between Dr. Hunter and myself than was evidenced in the newspaper account, and while I do not know whether these terms were used yesterday or not, I would like to use them because they indicate to me some of the key issues that we have to deal with. And these terms, believe it or not, have been used by the two of us here, Mr. Hunter and myself, neither knowing that the other was using them. They were *the systems approach*, (and I know that has been on our collective minds here before), and then the key phrase: that we are striving to do something where the "whole will be greater than the sum of the parts." These thoughts, if enough people have them without cribbing from one another, (which I can vouch for in this case), I think indicate the direction of the future; they are the key concepts in the utilization department and the essence of what we are trying to do in this area as National Educational Television.

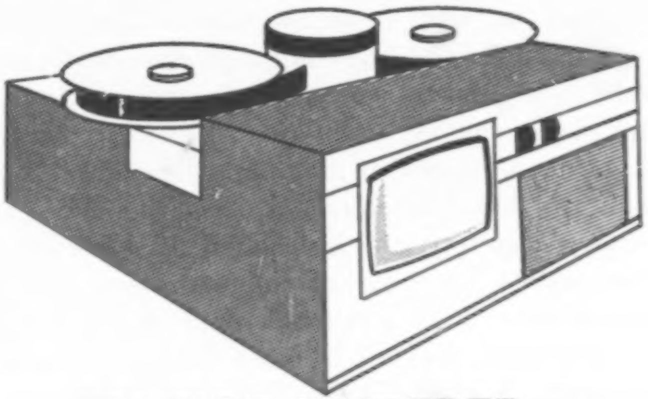
The systems approach, and the firm conviction that—when we use, together, the various ways of achieving an educational mission—the whole will indeed be greater than the sum of the parts. I want to just very briefly sketch some of the things we have done, (although this in the past) and see whether we can project from this to the future.

So far, we have only been in operation with utilization of educational television programs for one short year and what we have tried to do was to encourage—wherever there was a receptive atmosphere for it—the *combined* use of educational television and some other things. Now these other things could be books, they could be study guides, they could be various types of lectures tying in with educational television programs, and quite obviously they can also be every type of correspondence and home study. A good example is the Shakespeare series *An Age of Kings* which some of you may have seen and for which we have actually had somebody write a study guide. It does not look like the standard study guide at all, but is almost a textbook on these particular plays, subdivided the same way that the television series is, and questions have been added for reflection and discussion. Now this is quite adaptable to the concerns and to the practices of correspondence study and it shows how close together we are in this.

Another thing we have just launched, and we do not know yet how and in what way it is going to affect the two efforts, is an attempt to put together a well-established study-discussion program of long standing, the Foreign Policy Association programs, *Great Decisions*, with a television series. We have simply adopted the subject areas and the approach developed by the originators of the programs and have tried to make eight television programs that would cover the same areas. These programs add one dimension that is not provided in the printed material and that is the *human interest* aspect of world political problems and decisions. We are going to watch very carefully for eight weeks and see how this discussion program on international affairs benefits, or how it is affected by a series of television programs in which the focus is on what a given decision means in terms of human lives and individual human fates. These are the problems that are discussed on the screen for the most part.

These are, briefly, two of our projects, but they are descriptive of what the department of utilization tries to do.

How does this apply to the general field of correspondence study and the use of other audio-visual media? I think that it could fairly be said that educational television is, in fact, correspondence study. That is, if it is done right. The mere broadcast of an educational message without any feedback, without any response, is not, in my opinion, the whole job that educational TV has to do. On the other hand, the moment you send out a registration form, whether it is for credit or not, and the moment you get back answers to questions, or the moment you get comments in the mail, you are in correspondence study. Therefore, we are very close together from the start. Used properly, and, as Dr. Hunter and I would say, "Creatively," the size of this total enterprise could easily be multiplied many times by the existence of this media. What we can do now is to facilitate the seeking out and the identification of the potential student to a very great degree by promoting and announcing the whole system of course offerings over the television screen. I think that if this—and it is not being done yet in the degree that I am thinking about—were done, the size, and also the impact, of the operations all of us are engaged in could jump enormously.



TV TAPE RECORDER—
ALREADY ON THE MARKET—

Another thing can be done, and probably has been done, but not enough, so that there is still a great deal to do in the future. This is to put the correspondence instructor, or the correspondence teacher, on the air. It seems to me that a great deal could be gained by giving this unseen correspondence partner an actual appearance, an identity, and if you do not object to the word, an image. This fellow should be on the air and he should be talking to the students. In open broadcasting that means that he will also reach a lot of people who are not students, and that will impose certain additional problems and certain additional problems and certain additional disadvantages on the instructor. But I do think that he ought to be on the air. I also think that the correspondence student should be on the air. For example, if you have a course in any kind of writing, you can, I think, achieve a great deal of interest, identification, and healthy competition by selecting three or four of the winning productions, whether they be essays or whatever the writing that is being taught, and read them on the air and have the students who sent them actually come and read them themselves. I am sure this could be done with any number of other subjects. I am sure that it is not limited to writing but this is the one that occurred to me.

The next point is that in the utilization of educational television, as in the correspondence field, what we in educational television call the *related materials* are absolutely indispensable. I am convinced that, with perhaps the exception of a good telecast of a symphony concert, every kind of educational television program benefits from the fact that the viewer has in his hands something that expands on what is on the screen. The screen image is a very fleeting thing and, when watching television at home, we become accustomed to the telephone ringing, or other disturbances which cause us to leave that program. I have yet to see how this could be corrected when people are at home. Therefore, the instruction does not have the kind of intensity and follow-through that it should have. I am not, incidentally, limiting this to instruction; it is also true of a non-instructional program. Take the *Age of Kings* in which you have missed something if you leave the set for ten or twelve minutes to answer the telephone or because of other disturbances of a domestic nature. It is our job, I think, to provide a bridge to the complete work that you would get if you were in a theater. We have done quite a bit in this respect and if I may, I would like to mention that there is a paperback book, which has come out with some cooperation from the BBC, (which produced *Age of Kings*) and some cooperation from N.E.T., which has the exact text as used on the air. The individual teacher is not only free to have his students go to the full text of the play and compare and study the excisions as well as the continuity of what was left in, but is encouraged to do this. Then there is the study guide I mentioned, and which I would like very much to see revised, because I believe that it contains at least the beginning of a good textbook.

Now two other things. Group discussion—or even the discussion of what is being learned by just two people—is so enormously helpful. I know that many of you are doing this anyway but it just seems to me that some kind of a premium should always be offered for correspondence work undertaken by more than one person at a time. I cannot stress this enough. We have had experience now with *Age of Kings* where people say they liked the TV program very much, they also liked reading the plays, and they liked the study guide, but the greatest educational experience came from talking about it afterwards amongst a group of people who watched it together. I believe in that—even if it is only two people. I would say that there should be a discount of 50% on materials that two people bought, but it is not my job to balance the budget, so this is merely a suggestion.

Secondly, parents and children also have an enormous field here opening up to them whereby they both learn, and help each other. There has been a very interesting experiment in Denver on this—which I am sure some of you know about—where Spanish was taught to children in school broadcasts and the lessons repeated at night at an hour where the parents could be helping their children. The results have been very encouraging, I am told, in terms of test results and in terms, (I assume), of cementing family life. There were eighteen hundred families that did this in Denver and I think that is pretty good for a start, but it could be eighteen thousand without too much trouble. When the parents and children are working together you are obviously in correspondence study because you have recruited the parents for this job and you have had to enroll them somehow. You have to know they are there and they have to know when the program comes on and from that moment on the situation is the one we are talking about—correspondence study *plus*!

I think it is also very important to limit the use of television to what it can do best and that, I submit, is to send out pictures and sounds that are not available in any other way. That means that in due course, the classroom teacher or the correspondence instructor will reclaim his proper function which is to teach his own students and let television do the thing that the classroom teacher cannot do. A good example of this would be, naturally, an excellent performance of a drama but there are many other things that require the picture or require the experiment that can be done so beautifully on the screen. You do not need anything except the screen to do it and then the teacher, on the other hand, is repossessed in his own right because his ideas, his interpretations, and his relationship to his students become reinstated in the importance they should have. At the same time, television goes up in value because it does that which it is best equipped to do.

There are many obstacles on the road to these kinds of things and I would suggest that the greatest of them is the tendency all of us have to build empires. The kind of cooperation that we are envisioning here requires the abdication of sovereignty on the part of many individual departments. This is no longer a matter of making one department, or division, greater and better and more powerful than the other. It often requires subordination and integration. I suggest that sooner or later we are going to develop a new kind of administrator who will successfully coordinate these efforts that use all these media in conjunction. Because, if it is left to the individual department you are bound to run into the vested interests. Something like a "project officer" with authority over what air time should be given to a certain instructional or educational program, and with authority to tell a publisher that something has to be published by a certain time, otherwise it is not going to make its impact in connection with a series of television programs, and so on. This requires a good deal of doing, and I think many of us practice or require too much democracy in this—there can be too much of all the good things in life! It requires someone to knock our heads together and make these various "systems" come out right and at the same time. I do not know whether we have this system at this moment. We need, I believe, some kind of administrator who has the authority to work with a broadcaster, with a printer, with an instructor and with, perhaps, the office that controls the examinations, and to join all these together. This is the subject I am sure we can explore and illuminate in the individual discussion groups later today.

Then I have down here a word of something else that is needed and that is—money. I gather that you have discussed this; so, I will simply pass over it. But the question of timing is a vital one we need to think about. We look forward to the time when educational television—at least the transmission of N.E.T. programs to the stations—may be practically simultaneous, but this is four or five years off. It requires the tricky thing of being able to send a half hour program out on a night telephone line in about five minutes and have it received on tape by the station. These are technical matters which I only hear people talk about and I am very impressed with how much they know. I know it is a little ways off in the future, however.

Finally, the realization—so long as we are on television—that *all* television is educational. My authority for this statement is Samuel Gould, the new president of the new educational television channel in New York, who said this last Friday. When he said it, a little roar of protest went up in the audience, but I think he made his point rather well and that is, all television is educational, *for better or worse*. It is a medium that is so ever-present and that works on us, whether we ilke it or not, many hours of the day. We cannot say that if people do not tune in to the educational channel they are not getting educated. They are. They may get educated in some very valuable things on the other channels and see some things that, in fact, the educational channel should urge them to see. They also see some things right out of that famous wasteland and we can each think of our own favorites there. So that I would think one other thing needs to be done by the educators, whether they are in television or in the other fields we are concerned about here. That is, I believe there should be a continuing review, of some kind or other, of the total broadcasting spectrum from an educational point of view. It has been done in some places and I understand that anyone who is here from Pennsylvania State University will know about one such project. I think this should be done everywhere. The medium is so powerful and it is so constantly working on us that I believe educators should have a continuing activity that reviews the week's TV output for the broadest possible audience. This certainly would indicate to the television industry how their programs are doing. Whether it is a weekly half hour of criticism, or something that involves feedback, where you invite people to write in and criticize, or otherwise comment on television, or even tell you what they are watching and why—all of this would be educational.

So, I was happy to hear that we are embarked on a honeymoon audio-visual and correspondence

2

study. I think it should be a honeymoon expanded to more than just audio-visual and correspondence study. This may be polygamous—but we don't care. We need to include all the printed media, educational television records, tapes, and the broader commercial television—because what we do *not* do in this field now is going to haunt us years later.

DISCUSSION SUMMARY

It is suggested that instructors (those of correspondence courses, specifically) explain certain aspects of the program on the air; these aspects would be much the same as those comments entered on critique sheets to the students. With a related study guide and the extra comments from the instructor over the air, the student then should have a complete understanding of the correspondence-televised course.

The fourth grade class (English or History), for example, is ready for television instruction. History, especially that of a certain state, with proper aids (pictures, exhibits, graphics, etc.) would be presented simply and interestingly to those students of even the lower grades. Individual differences cannot be logically dealt with in television instruction. However, when one broadens the term, even the classroom teacher cannot, in the true sense of the word, logically do this. There seems to be no reason why individual differences cannot be tolerated and considered just as much in well-constructed courses offered by broadcast media as those of the typical classroom situation. The same aspects can be applied.

Television education is expensive. There is no reason to expect it to pay for itself, as it is of the same basic (necessary) nature as that of a school library, etc. A special fund should be set aside, especially by those schools which have a public income, e.g., state universities, to pay the expenses of such an atcivity.

The viewing audience likes audience participation. Pros and cons of this suggestion are: With the student audiences participating in discussion, many concepts may be introduced into the course which would not be brought in by a straight lecture type presentation. Because the instructor cannot predetermine the questions to be asked by the students and because the students themselves are not television performers, the idea is unsound as it would only distract from the course content.

Courses should be designed for the individuals —the "masses will take care of themselves." Programs should be aimed at a high teaching level—not at illiteracy, but to the average of the persons who will be taking the course and it must be assumed that he is well-read enough to qualify for the course. When a course is aimed at illiteracy, the intelligent people became bored and do not watch the programs—the program, then, does not fulfill the purpose of instructional education, but instead, is providing "entertainment."

A study is underway in which a central division of instructional television will be established from which schools may obtain film facilities and regional facilities to acquire the best instructional programs that can be had and make them available to organizations (schools and television stations) desiring them. It may be that all supplementary materials will also be included. Problems such as policing the national distribution of programmed learning, quantity control, and final authority with regard to television offerings on national networks, evolve from this projection, however. It is suggested that the academic departments of the colleges determine the credit to be earned and that perhaps a national conference on what the academic departments would allow in the way of televised study would be helpful.

Rebroadcasting of television programs in education is possible on a well-planned schedule—it would be necessary to take into consideration the fact that several courses should be offered within any one year. Television "census-takers" also should be reminded that many people who are not enrolled in the courses will be in the viewing audience.

Projected Media

O. S. KNUDSEN

New developments in projected educational media—in spite of transistorized projectors, thermoplastic recordings, tape recorders electronically synchronized with slide films, and, in one case, an optional track on the edge of a slide film, I'm going to spend my time this morning discussing only one of the new projected media. I'm going to talk about 8mm.

When I finish I trust you'll understand why I have elected to limit my subject in this fashion. This should be apparent if you will keep in mind the apparent potential of 8mm on the one hand, and the time allotted for presenting an understanding of this development on the other.

I am supposed to be talking about *new* developments in projected educational media. What's new about 8mm? I am certain that there are in this audience several individuals who have had 8mm cameras and projectors for many years. Why then can we classify 8mm as new?

The answer comes not so much in 8mm as a size but in the emergence of an educational potential for 8mm. This is in turn due to a combination of several relatively recent developments. First, we have witnessed the development of photographic materials and procedures which makes it possible for us to preserve an adequate degree of quality in a second generation print. The importance of this lies in the enormous increase in the total number of films which can be printed from one set of camera negatives. The second development was that of the projectors which make it possible to use sound on 8mm film. In addition to these developments the emergence of certain values which are inherent in the smaller size now stand out. One of these is that the storage requirements for 8 mm are far lower than those for 16 mm. If one is to think in terms of a classroom library this becomes a very important consideration. A second and lesser known value has been the improvement in the possibilities for endless loop projection of film. The engineering problems here have been decreased because of the reduction of the mass of film which must be moved and in the reduction of the velocity of the film movement.

It is a combination of these new developments —the second generation print with its potential high volume, the magnetic sound on film, and values inherent in miniaturization which have brought to the motion picture industry a reawakening of the potential of 8mm. This reawakening is attested to by the Toronto conference of the Society of Motion Picture and Television Engineers where a major share of the time was devoted to the discussion of 8mm, it is attested to by the 8mm conference held at Teachers College, Columbia University under the supervision of Dr. Louis Forsdale, and, if you wish, it is attested to by the Sears Roebuck catalog—simply count the number of pages devoted to 8mm cameras and projection equipment in their latest large catalog. Laboratories, equipment manufacturers, and distributors—all are interested.

What has happened as a result of this interest in 8mm? Well, seeing is believing. I have arranged two short demonstrations. The first of these is a demonstration of 8mm magnetic sound. The sound you will hear comes from a narrow magnetic stripe on an 8mm film. It is being played on a stock 8mm projector. We are, however, using a large speaker in order to let you evaluate this performance better. The projectionist will please turn on the sound projector. (PAUSE)

The size of the magnetic stripe on which this sound is recorded is about as large as the line you would get on paper with an ordinary lead pencil.

In the sound demonstration you should get some idea of the quality of 8mm picture—this time it is a Technicolor print. In this same demonstration you should begin to get some idea of what I referred to earlier as some of the engineering advantages inherent in miniaturization. I think it might be interesting for you to time the loading of this projector. I am going to put the film on the projector—I will take care of the feed reel, take-up reel, and the threading. I will turn on the projector and I will focus it on the screen which is already set up. Now if you are ready with your watches—one, two, three, go. (PAUSE)

Well, we've had a listen, we've had a look at 8mm. Thus far we have largely been concerned with a film which has a different size. However, the exciting prospects for 8mm come when we view it, not as a simple change of size, but as a development which can change our patterns of usage.

(The following materials will be developed in diagram form on the blackboard. An outline of the final set-up of the blackboard is appended.)

Our present practices in the use of educational film have grown up around the economics of 16mm. This is true not only of the distribution of film, but to a degree on the content as well. The 16mm pattern can be characterized by the fact that it is a rental system, by the need for large central or regional libraries which rent out the films, by the use of centralized projection rooms or portable projectors which are passed around from one classroom to another, and by a status of film availability which we might grade as accessible. (It's possible to get it.) Films in common use in 16mm tend to be long films. This is necessary if for no other reason than to justify the required set-up time. Furthermore, these films are expository. The expense of a 16mm print is such that the producer feels compelled to make the film one which can "stand alone." This in turn leads to the expository treatment. The 16mm rental system is largely based on the economics of 16mm. If this is the case what can we expect from 8mm? First, in terms of the economics of 8mm and second in terms of the pattern of usage?

An understanding of the costs now involved in 16mm or to be involved in 8mm is available from a consideration of the major components which go into our retail costs. One component is the print cost. This is the charge which the laboratory makes for the print. It does not include any production costs. This particular component of the cost is interesting in that this is the area in which 8mm will make its direct and immediate attack on costs. The second component is that of the amortization or production. This component is noteworthy because it constitutes the component most susceptible to a drastic reduction. That is, if we can increase our use of a film by 10 times—then this cost figure might be reduced to 1/10 of the original asking. A third component involves the cost of merchandising. A large volume will not necessarily reduce the costs which are allocated to merchandising. However such volume might influence the patterns of merchandising which could in turn effect some savings.

In 16mm the total of these three costs, color and sound, comes to $120.00 per ten minute reel at today's prices.

Of that total of $120.00 something in the neighborhood of $24.00 will go to the laboratory for its services. This is 20% of the total cost. The direct cost impact of 8mm is going to be on this relatively small fraction of the retail cost.

The remaining items will amount to 80% of the final cost. That portion allocated to amortization of production and to merchandising respectively is not available. There appear to be wide variations between distributors on this figure. Actually, there is little reason here for disputing the respective portion allocated to each.

If production and merchandising costs for 8mm film remain at the same dollar level as they now are for 16mm, then we will effect very little gain by going to the 8mm film. At the present time costs for an 8mm film of equal running time to one of 16mm amounts to about 65%—in this case $15.60 per reel. If the number of films distributed in 8mm remains the same as for 16mm then there will be no change in the amortization figure and probably no change in the distribution figure. Our total cost of 8mm during this initial period would be $111.60. And I submit that there is nothing attractive about this, pricewise, as compared with 16mm.

But now what happens if we get away from the volume which has characterized 16mm film in the past. Amortization today as we have said varies between companies. Roughly, films are expected to amortize themselves at something around the 450-print figure. (Interestingly, a common order for 35mm theatrical prints has been 350.) Now what happens if we jump from this to an order requiring shall we say 10,000 prints? Rather than attempting to trace the downward spiral in price which such an order should precipitate, we might look for the end points. What would cause print costs to stop going down, would there be a floor to a downward spiral in amortization, etc.? The endpoint in the case of the print costs might be approximated by comparing the final laboratory charges with the raw stock charges. Today's $24.00 cost for a color positive print in 16mm is approximately three times the cost of the raw stock—six cents per foot for the finished film as compared with two cents per foot for the raw stock. Our laboratories now are working on something approaching a three-to-one ratio. As an end point on a *mass production* of 8mm it ought to be possible to assume a 2 to 1 ratio. If the laboratories can achieve this reduction in costs, a print for a single 8mm reel would be $4.00.

As we have said before, the amortization of production costs can be more drastically reduced than any other of the major costs. The end point here is dependent directly on volume. With our hypothetical 10,000 print order, and assuming production costs of $1,000.00 per minute for 10 minutes, this would end up at $1.00 per reel.

The estimate of an end point in merchandising costs is based on information from a related field, textbook publications. In that field one "rule of thumb" sets the selling price at 2½ times the manufacturing price or in this case the sum of the print costs $4.00 and the amortization $1.00 which totals to $5.00. This times 2½ gives us $12.50 for the final cost of the print. Filling in our mathematics this means that $7.50 will go for merchandising.

With such a figure, with $12.50 as the price of a 10 minute sound color film in 8mm what can we expect in the way of changing patterns? Such a figure should enable us to characterize the 8mm pattern in these ways: It is a pattern of film ownership, a pattern built around a classroom library with projection within the classroom and with a projector which remains in a ready-to-go status. This should result in high availability status for films. Films will be "at hand."

Again there will be an influence by this pattern on the content of the film. The films will be short films—those with a single point. Not all classroom activities are given over to explanations, lectures and other forms of expository matters, so we should expect the films to move into very important areas within the classroom which are not characterized by exposition. We can expect problem films, situation films, and open-ended films which can do so much to assist us in our modern stress on creativity.

A change from 16mm to 8mm *size only* is an *interesting* development, but if this film size can lead to a new pattern of usage then I think you will all agree with me that 8mm does have a tremendous potential for the future of education.

Two Patterns

16mm RENTAL		16mm		8mm (initial)	8mm (potential)		8mm OWNERSHIP
Central Library	Prints	$24.00	(20%)	$15.60	$4.00		Classroom library
Centralized or portable projection	Amortization of production costs	$96.00	(80%)		$1.00		Classroom: ready-to-go projection
					$5.00	x 2½	
Films are accessible: It's possible to get them	Distribution			$96.00	$7.50		Available: at hand, ready for use.
	Total	$120.00		$111.60	$12.50	←	
Long to justify "set-up" time							Short: single point, specific
Expository: expensive so must be sure to "teach" by itself—must "stand alone"							Oriented to teacher procedures: Problem presentation Situation films

DISCUSSION SUMMARY

Projected media has been thought of primarily in terms of films and film strips. Thirty-five millimeter and 16 millimeter films are available with the latter being the most common. The use of these films in correspondence study has seldom been considered because of the cost of both film and projectors. The initial cost has almost made these prohibitive for correspondence study but the major difficulties are the expense and difficulty of sending these items through the mail and the risk of having inexperienced people operating the equipment.

Many of our films do not create the proper atmosphere in a classroom or to the student. They merely create a case of "this is what should happen," or "this should not have happened." We need films which cause creative thinking: Films which present a problem which will cause the student to come up with an answer.

Other means of projection, such as the use of overlays on the overhead projector, have not been considered feasible for the same reason attached to film projectors.

With the many new developments in projected equipment and materials, it is important that correspondence study and audio-visual people look to the future and consider the use of the newer media in correspondence study courses. One new and important development is the 8 mm. film. The manufacturers of this film are not trying for the educational markets but are interested in home viewers.

Some people working with films are producing 16 mm. film and reducing them to 8 mm. This may be one solution for getting 8 mm. film, if permission can be obtained and equipment procured for producing.

The 8 mm. film is not available in large quantities at the present time but it is much cheaper. The projected price is $12.50 and it has many more advantages than the 16 mm. film. Two of these advantages important to correspondence study are small bulk for storing and because of size the mailing cost is very reasonable. One new development in 8 mm. film comes from Educational Services Incorporated (ESI). They have developed nine demonstrations on one 8 mm. reel in a single strand with a black leader separator. These demonstrations are taken from the PSSC physics course and each demonstration runs from two to four minutes. This film is designed in a continuous loop Technicolor "Magicartridge" especially for Technicolors 8 mm. projector.

Other 8 mm. films are being developed for special projectors. The projectors are not standardized and the film cartridge will fit only specific projectors. With more extensive use of this media, standardized projectors will become available. Projectors are available at present priced from $22.00 on up with Technicolor-automatic projector mentioned above selling for $99.00.

Hand operated viewers are available for 8 mm. film. In addition, there are inexpensive viewers available for slides and film strips. Viewers for micro-film are available but are more expensive costing from $65.00 on up.

The University of Iowa has developed an inexpensive cardboard viewer primarily for viewing overlays and transparencies. This viewer will collapse into a very flat package adaptable for mailing. It also has an attachment for an ordinary light bulb to be placed in rear of the viewing screen.

Sources for information on equipment may be gotten from the Society of Motion Pictures, Television Engineers and the National Audio Vision Association. The latter is an excellent source for information on 8 mm. and 16 mm. film.

The correspondence study and audio-visual people must read each others literature and must make their educational needs known to designers and manufacturers of projected equipment.

Audio-visual people should be contacted with reference to advising and consulting with correspondence people concerning how to deal with faculty members.

Audio Media

WILLIAM H. MADDEN

I feel a little embarrassed up here with all these educators on the panel because I think I am the only one from a commercial company and I am used to making commercial messages. I will try to be strictly academic which is a little difficult for me.

Magnetic tape is something I would like to talk about as far as audio media is concerned. It might be newer radio media to the correspondence teacher because it is my understanding that it is not being used too readily in correspondence study. Unless we have something to retain such as the notes you are taking and so on, you do not have any need for magnetic tape. Magnetic tape commits sound, sight, or electrical energy of any type to memory and it does it better than any know medium. Its versatility is amazing. It will record the spoken word and is doing this efficiently throughout the world and it will record video frequencies enabling us to add the miracle of sight via magnetism. Magnetic tape is used in oil exploration, helps fly planes and guided missiles, stores computer data, communicates with the sending apparatus of satellites. There are some unpleasant uses too, like recording our income tax forms for checking or cheating. We feel that magnetic tape and the tape recorder have become the pencil and paper of the electronic age. We think that it is high time for people in correspondence schools to start to use it. I am going to talk more about what magnetic tape is and what it can do and maybe we will peek into some of the things that are in the laboratories.

The tape recorder took over 1900 years of civilization, as we know it, to become developed; and in the relatively short time that it has been here, it has made some tremendous progress. For example, when a tape recorder was first introduced into this country in 1946, it took speeds of thirty inches per second to get life-like reproductions. Prices were even higher. It took three or four thousand 1946 dollars to buy a decent tape recorder. As recorder and tape technology became more sophisticated, prices came down and the quality has gone up considerably. Today, excellent quality can be obtained at speeds as low as one and seven eighths inches per second or one sixteenth the speed of recorders back in 1946. In addition, the recorder has become more simplified and less expensive.

The electronic age has brought us transisters and printed circuits which have made the recorder more portable and more versatile. The improvements are both the cause and result of the fantastic growth in magnetic recording. This growth has helped reduce prices in both equipment and tape over one of the most inflationary periods in our history. Why is there this growth and interest? It is simple. There *is* a need to retain information quickly and correctly. Magnetic tape recording does this better than any known medium. As an example of how the spoken word can more correctly convey the message than the printed word at times; a little story. A Jewish friend of mine told be about a fellow who was walking down the street in New York City and he had been caught in the rain. His suit was quite rumpled but; unfortunately, he did not have any money with him. All of a sudden he saw a sign on a tailor shop and it said, "My name is Fink; what do you Think? I press suits for nothing." He thought this was the answer to his dream; so, he walked in, had his suit pressed, was walking out the door very natty and all spruced up, and the tailor said, "Wait a minute, you owe me fifty cents." The man said, "What do you mean I owe you fifty cents. Your sign says, "My name is Fink; what do you Think? I press suits for nothing." The tailor replied, "Oh no, that is what you read in the sign. The sign says, "My name is Fink. What do you Think? I press suits for *nothing*?" So you can see that a printed word can be misinterpreted, but with the spoken word, you will be able to get the accent in the right place.

We know the purpose of a magnetic tape recorder. Let us use our imagination and ingenuity and see how we can take advantage of this electronic miracle. From the early days of recording, in 1949, to be exact, we at the Minnesota Mining and Manufacturing Company (3M) were faced with the chicken and egg problem that is so prevalent in our everyday life. We had magnetic tape but no mass availability of recorders to use it on. To advertise magnetic recording tape was rather senseless because we were advertising to a very small segment of the population. We knew that tape recording could form a real function in education but we had to give the educator a tangible reason to buy a recorder so that he could use it. At the same time radio was being used more extensively to supplement the classroom teacher. We foresaw how the tape recorder could commit a radio program to memory and thereby overcome radio's biggest disadvantage, inflexibility. We underwrote a Tapes for Teacher program in the state of Minnesota. Here is how it worked. Any school could send in a blank roll of tape to a central agency and indicate just what program they wanted recorded. The agency recorded these programs on the school's blank tape and returned it to them. The teacher could then monitor the program before using it, he could fit into his curriculum as he saw fit, and he could overcome the inflexibility of the radio schedule. In addition, the radio style programing was designed to put the point across faster and maybe make it stick a little longer. I am not an educator but we do educate in sales training and so on, and we know that if we can get the point across faster and make it stick longer, we have accomplished something.

Programs of all types were and still are available. Science, history, mathematics, foreign languages, guidance, you name it. This program may be available in your own state. If your state does not have this program, there is a national repository at the University of Colorado. Catalogues describing the various programs and the subject matter may be obtained by writing Dr. de Kieffer at the University of Colorado in Boulder. I believe there is a small charge for this catalogue. It seems to me that correspondence study can also utilize tape to supplement their courses.

As I understand it, there are well over a million people taking correspondence courses sponsored either by colleges or universities, armed services, or private correspondence schools. I think all of you can recognize the values of the supplemental programs previously described. One thing is certain, you too have the chicken and egg problem as educators that we faced as manufacturers. We found out, and I hope you will take a page from our experience, that if an idea is worthwhile and is offered, people will accept it. For example, how many of you actually offer magnetic tape programs as part of your curriculum? We look at bare statistics concerning tape recorder ownership which you may have done. It can be somewhat discouraging. I recall in 1949 a sales visit made on a rural school in Minnesota concerning the Tapes for Teaching program. The teacher was sold on the idea that if she wanted any help she could get it. Unfortunately, she did not have electricity in her school. We could not help her then, but we can now with battery operated transistor recorders. Although only four per cent of the families in the United States own tape recorders, they are becoming recognized as a mass consumer item. Public utilities are mentioning them in their statistics along with washers, refrigerators, ranges, TV sets, and so forth. In fact, right down here in San Antonio the public utility mentions it as part of their statistics. In addition, recorders are available from local dealers of all types, on a rental basis. Most schools now have recorders. Many libraries, churches, and business concerns have recorders. It is obvious that even in rural areas, a student can have access to a recorder if it is necessary and is beneficial.

Let us acknowledge then that although recorders are not available in many households, they are growing in popularity and access to a recorder is not an insurmountable problem. Where else can we use it? I think the most natural use of a recorder in education is for speech and foreign language training. The government recognizes the need for more fluency in foreign languages and has budgeted a large amount of money for equipment to help teach these foreign languages. The most natural supplemental tool being purchased with this money is the tape recorder. I understand Mr. Charles Wedemeyer who is at this meeting, and Director of Correspondence Study at the University of Wisconsin, has reported good use of tape for language and speech courses. They use the same language tape as used in their regular language laboratory for extension courses. Speech students can take their practice speeches and return them to the department for correction and criticism of the teachers.

The 3M Co. is going to make available a tape to language teachers explaining how some outstanding educators grade language tapes. It will be available in June. It will cover the grading of auditory comprehension, oral self expression, sound discrimination, structure and syntax, pronunciation, and the administration and grading techniques of spoken answers. We are certain all of you agree that it is nigh onto impossible to be able to grade a speech without hearing the student speak at least as far as pronouncing the words and so on.

I understand that discs are used in many schools because of the availability of phonographs. Unfortunately, the student can only listen to a disc, he cannot complete the picture. Certainly recording on a disc in the home is possible, but it is difficult and cumbersome. This is one of the reasons why tape has grown so dramatically. One does not have to be a sound engineer to cut a tape. The equipment is simple and easier to operate so that even the rankest of amateurs can make an excellent quality tape.

Let us review for a moment. Tape recorders are available for purchase, they can be rented or borrowed from dealers of all types; schools, churches, business concerns, libraries. The spoken word can supplement correspondence teaching in all subjects via a Tapes for Teaching library whereby you can fit the program to the curriculum. Tape recordings in speech and foreign language courses enable both the student and teacher to check on progress.

How about the type of recording equipment available? Offhand, I could name over fifteen manufacturers of tape recording equipment in this country alone. I would like to impress upon you, however, that recorders are available today in just about any price range from thirty dollars on up. I was interested in an interview recently with a British manufacturer of tape recorders who feels that Americans are putting too much emphasis on a recorder that does everything—two track, four track, stacked heads, staggered heads, and so on. Everything buttons. He is promoting a single speed, simple to operate, portable and inexpensive machine that costs about $60.00. They are selling very well in England where they have far more recorder owners per capita than we have in the United States. He seems to feel that this is one of the reasons why. It seems to me that this would be an ideal type recorder for correspondence study. It puts a maximum on performance and a minimum on the frills, if you are looking for performance. It is the way to get an inexpensive recorder to the student and make it feasible for them to use it in correspondence education.

Very new and exciting developments are occurring in this market I have a sample with me; you can take a look at it later at our sessions. This happens to be new cartridge which is being developed for a revolutionary tape recorder. The thing about this cartridge is that it eliminates threading the recorder which can be a bugaboo to some people. You can also stack the cartridge just like you do phonograph records so that you can play five or six of them at one time without ever touching the machine. You never see the tape. The tape is never exposed to dirt, dust and so on. All you have to do is push a button and let the tape work for you. There is also research work being done on trying to determine just where one is in a tape which has been a problem. New tapes are in the laboratory that give promise of amazing fidelity at very slow speeds resulting in economy in both equipment and tape. Mr. Knudsen mentioned this economical balance. We feel where the economy and tape are going to be affected is slower and slower speeds, less and less expensive recorders so that you can get the cost of the recording down to that of a phonograph recording and you still have the advantage of being able to record on it. Magnetic heads are being developed with finer gap widths, again aiding the tape development in miniaturizing recorders and ultimately bringing magnetic tape into the everyday life of more and more people.

We, of course, encourage you to use a recorder; it is our bread and butter. However, all commercialism aside, the recorder probably finds its most natural use in education. More and more students are buying recorders to record classroom lectures for replay later. We have a booklet entitled "Two Hundred Uses for a Tape Recorder" and far and away the most uses are educational, because it is in education that we have more need to retain information. I have happened to note that, although tape has not played much of a part in correspondence work so far, you people are interested in attempting to learn how you can use it and what is new. Most of you feel it should be able to help. I have not had any experience in correspondence study, but I am firmly convinced that a tape recorder in correspondence study can supplement correspondence courses just as effectively as it has already proven it can do in the classroom. Now you can supplement the curriculum with recordings of well-known people who happen to visit your campus. Music and music appreciation courses are naturals for tape. As I mentioned earlier, your imagination and ingenuity are just about the only limitations to the way you can use a tape recorder. This is where your genius comes in. Doing it is very simple, just like turning on a light switch. Tape recorders are ideal for use with slides and film strips, such as Mr. Knudsen showed here. I understand you cannot utilize magnetic stripping on the machine he demonstrated, but you certainly could run a recorder in conjunction with it. This will bring both picture and sound to the correspondence student.

Duplicating many copies of tapes is a very simple process. It is possible to duplicate tapes at sixteen times the speed of the original recording so that a fifteen minute program, just one copy could be done in less than a minute and the cost of this is far less than the cost of duplicating a record, particularly in quantities of fifty to one hundred which you would probably be faced with.

Book publishers are committing their foreign language books to tape in ever increasing numbers. Publishers such as Ginn and Company, Houghton Mifflin, Allyn and Bacon, Prentice Hall, to name a few who are putting recordings on tape. Why? Because there is a demand for it. The fact that thousands of elementary and secondary students have been and are being exposed to a tape recorder has resulted in this unprecedented demand for recorders in the home. By the end of this year there will be over four million tape recorders in the home. This is cutting down the problem of having a tape recorder to play the subject matter. The tape recorder can make your job easier and more effective.

Fortunately, a tape recorder does not replace anybody, but it will benefit you, and its benefit will only be as great as the program content—the material you retain. Correspondence teaching is growing and tape recording is growing. Tape recorders have proven their worth in the classroom, let's hope you give the recorder an opportunity to help improve education in correspondence study.

DISCUSSION SUMMARY

In discussing what new developments should take place in the area of audio media, the subgroup settled on three basic assumptions and then made fourteen recommendations for future developments that are considered desirable and, in fact, necessary.

The three assumptions were: (1) as audio devices and materials are mass produced, there is a reduction in consumer cost; (2) the immediate future is more important than the remote future though both must be considered; and (3) audiovisual and correspondence study people must be willing to experiment and to continue to improve if they are to keep pace with the rapidly moving, fast changing, increasingly complex field of education.

Based on the above assumptions the sub-groups attacked the problem "How can we obtain the best equipment and materials available, get information about them to the interested people and arrange for adequate availability and proper utilization?"

In order to solve the above problem it was suggested that it is necessary to explore what is presently available—including the resources of the varied local operations—and to make plans and recommendations for moving ahead from that point.

For information concerning present conditions the reader is referred to the first part of this report—*Current Uses of the Audio Media in Correspondence Study Courses.* Recommendations for needed equipment, materials and organizational structures follows:

Equipment

1. There is a tremendous need for a transistorized, battery operated, sturdy play-back unit which can be used overseas and in those areas of the United States where electricity may be hard to obtain or non-standard.
2. An efficient, reasonably priced play-back and/or play-back-record unit is needed, especially one incorporating a non-erasing system.
3. It is felt that a cartridge-loading magazine may prove beneficial in simplifying recorder operation; however, such a device should be simple to operate, efficient, reasonably priced and capable of being loaded by non-factory personnel.
4. If efficient use is to be made of the tape recorder, it is recommended that a variable speed attachment be devised which will allow variation in recording, play-back and response rates so the pupil may allow for time differentials existing between such tasks as textual readings, vocabulary response and/or explanatory monologues.
5. Perhaps the most desired item is a video tape play-back unit which will be sturdy enough to

last, simple to operate, reasonably priced and portable enough to be sent from spot to spot. The sub-groups realize that the above-mentioned items are not likely to be produced in the immediate future; however, all of the equipment items are greatly needed and sincerely hoped for.

Materials

1. While improvements have been noted in the methods of locating exact positions on a tape, much still needs to be done to make this faster, more simple and efficient.
2. Closely associated with locating exact location on the tape is the problem of fast access to stop-start locations which allow the teacher to hear the student's response without having to hear his own discussion and vice versa.
3. Different forms and/or materials for recording audio programs should be investigated. These include use of audio cards, incorporating the sound system of a motion picture projector to serve as a tape recorder and/or playback unit, new electronic devices including ultra small parts and printed circuits, etc.
4. Since compressing and/or speeding up of recordings appears to offer certain specific advantages, the sub-groups requested that more investigation and experimentation be conducted in these areas.

Structures

1. It is hoped that equipment and materials manufacturers will develop standards and specifications which will allow for more uniformity and interchangeability of parts. Much can and should be done to improve liaison between the producers and the consumers of audio media.
2. The newly constituted Education Media Council has been organized to act in an advisory capacity to both the consumers and producers. It was strongly recommended that both of these groups make use of the council.
3. There is a definite need for college and university groups to work out cooperative arrangements between public schools, public libraries, commercial producers and themselves so that audio equipment and materials can be effectively incorporated into the educational programs of each.
4. It is hoped that the commercial producers will stress the need, uses and place of audio media in schools during their commercial sales program to the home market. Such emphasis will alert the general public to the role of audio media in education and will also, it is hoped, maintain a balance between educational and general public products which will allow an interchange of equipment and materials.
5. Several sub-groups would like to see a central distributing agency established to collect, produce and distribute materials to users. Such an agency could do much to reduce production costs if the users could reach an agreement as to the type and content of the material produced.
6. The sub-groups expressed a concern that there be an effort to incorporate the visual as well as the audio media into correspondence study courses. It was felt that both are essential and that each has some unique contribution to make.

The sub-groups urge that their recommendations be brought to the attention of both the commercial producers and the audio-visual and correspondence study personnel in hopes that some of the proposals may come to fruition in the future.

Graphics and Manipulated Media

ROY ALTON FRYE

Among this illustrious group I feel a little bit like a combat soldier who has wandered in off the front lines into the headquarters of the strategic army command, and I want to tell you several things in connection with this before I get into my talk proper. Talking about generals and combat soldiers, Napoleon gathered his general staff after a particularly disturbing defeat, shook his finger in their faces and said, "Officers are extremely important to an army, and I must have you to win the war. But I would like you to remember that if every officer in this army were killed I could promote my sergeants and continue to fight—but if anything happened to my sergeants we couldn't hope to win."

Napoleon also said something else, "An Army is like a piece of wet spaghetti—you can't push it from behind, but you can get out in front and pull it."

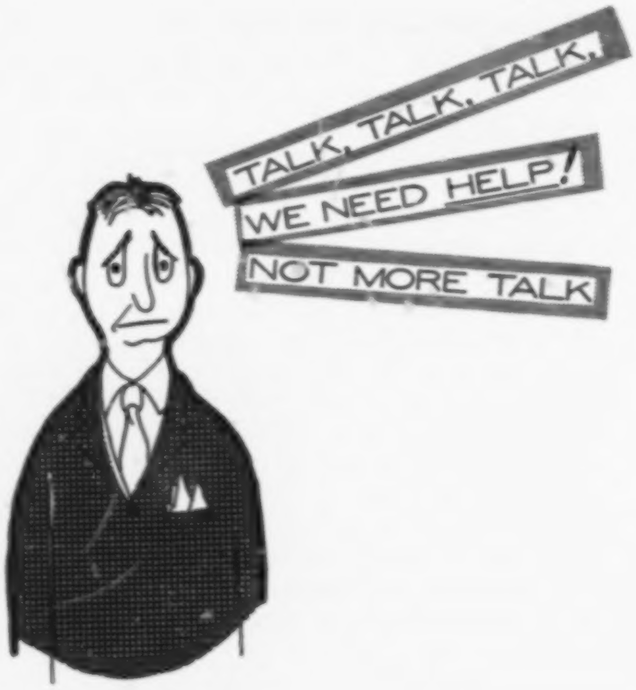
Now, to the subject at hand. I'm not so much worried about the generals as I am about the sergeants in our business. I think that perhaps we are not training them quite as well as we should. As the generals (our college and public school leaders) retire from the field do we have a sufficient quantity of high quality sergeants to take their places?

We are like knights in armor, ladies and gentlemen. If you do not think this picture quite suits you, I will just say that I did a little research while you were in your group discussions and I ran across the following: Five finger waggers, six arm wavers, and fourteen voice raisers. So, I'm pretty sure that this is a dedicated group of people, and here we are ready to go to war for the things that we believe.

One of our worries is that man's civilized veneer may not be as thick as we think it should be. We are concerned about this because of his preoccupation with nuclear devices and many other aspects of modern technology with which we must now live. Sometimes we feel like a man with his head in the mouth of a lion, especially after we have been shown a few of the many rapid technological changes and innovations which are taking place in education throughout the country.

First of all, I want to talk a little about theory, research, and teachers. We, that is—this group, all know how very important the development of sound research and new theoretical concepts is. I can say, though, with some authority, that practicing teachers are not often concerned about such matters. In fact, while working with hundreds of these classroom teachers over the last few years, I have become increasingly convinced that they are just a little bitter about our preoccupations with research and theory. They have *immediate* and *daily problems*—and they want immediate and daily answers to these problems. And until we can give them these particular answers to these particular problems they refuse to be much impressed.

Now—here we are, communications specialists. We talk glibly about many great things which are, undeniably, important to the continued improvement of education. We talk about Skinner, about new media, about technology. But, for a moment, let us look at another group of people. These are the principals, superintendents, deans and others with whom we have to work in order to get the job done. Have you noticed skepticism on these faces? Are we really sufficiently skilled communicators to communicate with *them*? We had better be, because we are asking them for money, facilities, equipment, changes in trend and true curriculum, and additional personnel.



And, finally, the teacher. He is saying, to himself—and perhaps now to some other people as well—"Talk, talk, talk—I don't need any more talk—I need help." Now, we are getting down to stark reality. Now we are not talking about the way things will be, should be, ought to be. Now we are talking about the way things are! And this teacher is not satisfied. He is being criticized, castigated. His salary is substandard, and he is very much aware of this. He does not, in the main, have adequate facilities to do the sort of teaching job that is being required of him. He learns one method of doing things only to discover that the school system or college by which he is employed handles the job another way. Until we move in and help him directly in the solution of these and many other immediate problems I do not believe he is going to be too interested in the bigger picture.

We think we have here at The University of Texas a solution to this immediate problem. We feel that if we can bring onto the Little Campus

(Extension Division), of The University of Texas, leaders from the field—both administrators and teachers—we can train them in the solution of many of their immediate problems dealing with the newer media. After fifteen or so of these people are trained in a workshop situation we can send them back to set up their *own* workshops, in their own systems, and thus, perhaps, effect the needed improvements.

Thus, any correspondence course or extension course could be taught using the packaged concept. First we need to involve the subject matter specialist in conferences with both the Visual Instruction Bureau and the Bureau of Extension Teaching and Field Services. Out of these conferences should come a packaged program consisting of the following elements:

1. Workshop for leaders from field
2. Course of study
3. Media designed to implement more efficient learning.

In actual practice we are setting up one program dealing, in the above way, with teacher in-service training. This program is designed in three blocks which will be offered in the following cycle:

1. Inexpensive Materials (Local Production)
2. Projected Materials (All projected media)
3. Utilization and Administration

Each workshop will run a full week, attendance will be restricted to public school leaders only and held to a maximum of 20 participants—so that individual contact may be maintained. Each participant will be asked to attend all three units over a two year period of time. Each participant will prepare a package during the workshops to take into the field in order to set up his own cycles.

By starting with these basics, we feel that we will arrive much sooner at our real objectives—which are real developments in the use of new media for the improvement of instruction, paralleled by constantly increasing efficiency in the learning process. We do not want to go into educational television, programming, team teaching, and other more complex areas of technology until we are certain that a firm, sound foundation for such changes truly does exist. Thanks.

DISCUSSION SUMMARY

Graphics has many meanings in different situations. For in-service training, it is all inexpensive types of devices to help put over the course. Graphic art is the method of communicating through the use of pictures, drawings, figures, etc., produced on a flat plane.

When graphics are used, an artist or illustrator should work along with the teacher or course writer. Course materials can be very impressive with the use of some simple illustrations. In some cases a little humorous figure can be used to make more of an impression. Graphics are not expensive and should be used in correspondence study courses. There is a wealth of inexpensive materials available if it would only be used.

Graphics present no problem in mailing. Many of these media are already in the textbook, or they can become a part of the course syllabi. If additional materials are used, they may be mailed as inserts in the syllabi or in the same package. With the high cost of over-seas mailing, graphics can be used to replace bulky or larger forms of audio-visual media.

The storage of graphic materials presents no great problem as compared to some of the other types of audio-visual media. Graphics can be returned by the students and reused. Even though these materials are not returned by the student, the replacement cost will be small.

It is generally agreed that graphics can be used and have an important place in correspondence study courses. There is one word of warning, just as is true with any other audio-visual media: they should only be used when they express concepts more clearly and efficiently than do other media and whenever they offer opportunities for students to express themselves in a creative manner.

Recognizing the value of graphics in correspondence courses, the question now comes up as to how we develop this media for the courses. Most correspondence study instructors or course writers are not familiar with or do not have a knowledge of constructing and using graphics with the written word. Two methods are suggested for answering this question: one is to use a team approach in preparing correspondence study courses, and the other is an in-service training program for correspondence study course writers.

The team concept is very practical especially for schools which have audio-visual personnel within their division or have such people available to them from other parts of the campus. In preparing a course by this method a team consisting of the subject matter specialist (writer), the graphics specialist, and the correspondence study specialist should be formed at the very beginning of the preparation. Each member of the team will then be in a position to suggest and advise as to the subject matter content, the supplemental materials (graphics), and format.

For schools which do not have a readily available graphics person, the team concept may be difficult to attain. If this situation occurs, the in-service-training of course writers may be a solution. We realize that the great majority of course writers and instructors are full-time campus teachers; therefore, it may be difficult to reach all of them for such a training program.

A workshop to be conducted by Mr. Roy Frye at The University of Texas for a selected group of high school personnel could be used as a pattern for training course writers. These personnel are to be trained with the idea of returning to their respective schools and conducting their own in-service-training.

The people attending this workshop will be supplied with a kit of materials and, with proper guidance from the instructor, will prepare various graphics which they can use in their classroom teaching. The materials in the kit are inexpensive and are intended for practical and simple graphics.

This type of workshop or a modification could be of value in training course writers.

Very little has been said about manipulated media; it has been dropped by the wayside in the discussion of graphics. Many of the same ideas in the production of graphics can be applied to manipulated media. Much more responsibility will fall upon the writer, or subject matter specialist, in the development of these materials. This is especially true in laboratory kits. Audio-visual specialists can, however, be of great assistance in developing and designing mock-ups, cut-outs, and other such material.

It may be impossible in most school situations to get the correspondence study faculty together for an in-service-training. It may also be impossible to get the faculty together from one college or department. It might be necessary to start with one faculty member, who has an interest in graphics and manipulated material, on an experimental basis. Evaluate the approach to this individual, and with this experience a better approach can be used to other faculty members.

There is a very positive and constructive interest and hope for the use of graphics and manipulated materials in correspondence study courses. Remembering that we do not need to become too complicated about this media, the simplified approach can be highly satisfactory.

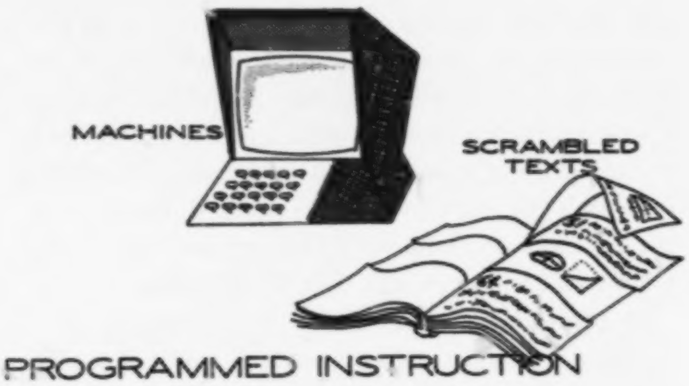
Programed Learning

DAVID KLAUS

I would like to illustrate a few frames from a typical auto-instructional program, a bit of programmed instruction. Some of you may not be familiar with what we call programed instruction; I would like for you to see it.

This is a first frame in a unit. Just read it to yourself and try to fill in the boxes. If you were a student, you would be asked to write—actually compose your answers. A fire can keep us warm because it gives off energy in the form of ———. The sun also gives off ——— in the form of heat. The student completes this by writing into the boxes directly. He then turns the page or manipulates the device somehow to go on to the next things in which he finds the answers (heat and energy). He comes to the second frame or step. Heat is one form of ———. This is called thermal energy. A quart of boiling water has more ——— energy than a quart of cold water. The student here is already making responses that he has just learned using them in a typical or exemplary situation. We go on to the third frame. I will not bother showing you the answers to that one. As a warm object grows cooler, it loses heat and it looses ——— kind of energy. When a cool object gets warmer it gains heat and gains ———. The student is gradually expanding his verbal repertoire or his responses. Ultimately, in a program such as this, the student would be able to tell you an entire story about thermal energy and heat.

This is not the only style of programed instruction you will notice if you look outside at some of the displays. You can see that there are two separate techniques represented out there. One is a set of materials from Teaching Machines Incorporated and from Teaching Materials Corporation which are two of the largest commercial organizations in the field. There is a book called *2600 English*. There is also one by Holland and Skinner on Psychology. These are all prepared in the same style as I have shown here. There are a few items out there by Crowder's group as you saw in the last set of slides of both Skinner's and Crowder's Corporation. The reason we have stuck to this kind of programing, and most psychologists have gone into it, is because it stems from what we know about learning. This kind of programing is different from how education ordinarily is conducted in the classroom. One of its advantages is that it does what very few teachers are willing to do—it assumes the burden of learning. Any materials that we or other organizations prepare that are doing the same thing prepare it in such a way that the materials themselves are responsible for learning. If the student does not learn, you cannot blame the student. It is not a problem of the student's ability, his motivation, his interest, or anything else like that. They are a function of the instructional material as it should be the function of the teacher but rarely is. If the teacher cannot say, "Johnny is stupid or unmotivated," she finally ends up and says, "Well, Johnny was too busy," or "Johnny has a poor home life," or some other excuse. It is never her fault; it is Johnny's fault. Johnny did not learn. Well, we do not take that in the way we look at psychology today. I am sure the problem is just as bad in correspondence study. Those of you here, responsible for correspondence study materials, are very willing to say that your materials are guaranteed to teach. In fact, when TEMAC first came out, they guaranteed that their materials would teach or they would give your money back, which I think is a fine idea.



We do learn from reading a textbook or from other materials. Psychologists today are not very sure why. We are sure, however, that the learning is very inefficient in terms of reading or listening as you are doing now. You are not remembering everything I say and you are not going to remember, very specifically, things I said a minute ago. If you think about it for awhile you will find out why. You are sitting there passively, not actively responding. I am not giving you a chance to participate in what is going on. If I asked you to repeat something for me you would learn it. You probably do know something about thermal energy at least. There you have had a chance to do something yourself even if it was said to yourself. In correspondence study we do not have a teacher. I will not bother to go into that harangue on how I feel about teachers and why I feel all instruction materials and programed instruction is very important. I would like to add though that in terms of correspondence study, you have a situation where no instructor can be present for all interests and purposes. It is under these circumstances that programed instruction is apt to do the greatest amount of good.

When the instructor is present, he may not be willing to assume the burden of learning, these materials always are and they are self-paced. Every student has his own, he can go at his own speed. It does not make much difference really. If he is a slow learner and is having difficulty, he sits there and goes through it again. You cannot do that with television. The man on the screen will not wait, and if you want to see it again, he will not stop. With programed materials, you pace yourself. If you are tired and want to quit that day, you quit and start again tomorrow. If you do not get something and would like to review, you can, but this almost never happens. If you ever wanted to, you could flip back a few pages and start again. It is all up to the individual learner. These materials can be tailored to meet an individual student's needs; not in terms of building materials for each individual student, but by supplying each student with the tailored set of materials in terms of units that he requires.

We found out something very interesting when we taught physics using programed materials. We discovered that many students in high school in the Pittsburgh area were incapable of doing simple things like dividing in terms of long division. A six place number by six place number was completely beyond them. They did not know and still do not know what an angle is. We are teaching geometry using programed materials. The larger the angle you see, the longer the arms are. Start thinking about how you teach them what an angle is. So, we find we can always prepare an additional unit and send that out first and say: "If you are not getting something right in this part here, if you cannot do the long division, go back and we will give you a little extra programing." It has some capabilities that some other kinds of materials very rarely have. I am sure when all of you study as a correspondence student, you read a magazine or newspaper or textbook of interest to you. It is very difficult to review material on your own. Psychologists and most educators, of course, are aware that over-learning is terribly important in retention. But how many times do you read a passage in a textbook? You read it through and you think you know it. Reading on, you discover later that you never did understand it in the first place; and if you did, you do not remember it anyway. This is largely what a teacher does for you. The teacher reviews and insists that you go through the material a second time. On your own, you very rarely do. Programed materials will do this for you. They space and review to insure retention. Retention is as long as you want it to be.

Granted, then that programed instruction may have a very important place in correspondence instruction, let me present three questions to you: (1) How do we present programed materials to the student? (2) What are the costs involved? (3) What are we going to apply it to? In terms of how we present materials, machines are always the first thing everybody thinks of. This is an audio-visual world for some reason and Dr. Campion is going to say a few things about it later, but I think today there are still more varieties of machines on the market than there are programs. This was true three years ago and I think it is still just about true. May I see the next few slides please? Nevertheless, people do turn out machines and I have a few pictures here in case you are interested. None of these are demonstrated outside. This is the GMI Grollier machine which sells for approximately $20.00 and are sold door to door by Grollier salesmen. It is just a tin box for all essential purposes. It contains a program inside on a number of sheets. You can use the sheets and a little cardboard mat and save yourself the expense of the box. The next slide is a GMI machine not currently available on the market, but it has a typewriter keyboard and some tremendous advantages in terms of controlling the student's behavior, but it also costs a great deal, about $300.00. The next slide is a 35 mm. backspring projector and has the writing unit over here. She writes her answer on the tape. The answer tape is adding machine tape. The fourth picture I have here is the simplest machine of all. It is what we call programed texts, binding the materials up in a book. This is expensive in terms of paper. We worked with about 600 high school students on physics study and we used three and a half tons of paper, but there was no earthly reason for it. We did something wrong somewhere.

When somebody sees program material and says, "My, how interesting! I think I will sit down and write some. I will be rich, famous and a few other things as well." Many people have become these things. Many of the programs you can buy on the market today. Unfortunately, the first question that I ever ask people who say they are going to write a program is, when did you write your last textbook? If you are not capable of writing a textbook in the subject, there is no point in starting on a program. Secondly, I ask them where they got their training in programing. It is hard to convince people how difficult it is. The only analogy I know is when I made my first 16 mm. color sound movies this last year and a half and I will never do that again. I think you can look at it the other way around and see what the difficulty one might have in preparing a program. To do a year long course in a subject, such as high school physics, takes about four man years writing time alone. The estimated developmental processes of such a program is $75,000. One of the implications of this for correspondence study in terms of the number of customers is that you are probably not going to do it on a single school basis. Each school is not going to develop their own materials. There is going to have to be some group trade-offs or group publication of these kinds of materials.

Trials are perhaps the most important part of the development phase of our instructional materials. This is the reason why we can guarantee their success because we do try them out repeatedly and after each trial, the materials are revised. No materials are ever done, never perfect. But when we get the error rate down and the achievement up to the desired level of about 2% error rate and about 100% achievement, we are happy. This does not always happen but we work towards that direction. We have some materials recently prepared to teach insurance for an industrial concern, that are about at that level. In terms of what to apply to the most advantageous area, thus far have been concept level materials, science and so forth. History and social studies have not been very successful and we are not working on creative arts in terms of problem solving geometry and art appreciation.

Foreign languages have been taught completely independently by tape. One of these was done in Washington. They trained GIs to speak Russian enough to interrogate a prisoner. They only taught them one hundred and some odd words of active vocabulary and the meaning of about 350 words past active vocabulary. If a GI got hold of a prisoner and the prisoner started talking, they did not want the prisoner to know that the interrogator did not know any Russian. One of the first things a guy learns is if the Russian speaking person starts talking at length, and gets too complex, the GI says, "stop" and in Russian he says, "Shut up or I'll shoot." That keeps them quiet and he goes back to simple language. They taught speech correction and a few other esoteric subjects such as the one I brought along; a little program on how to use chop sticks. There are many interesting things that can be done with this kind of instruction. It is perfectly individualized as I said before and it does insure learning.

I would like to report for just a second on some research which is as close as I can come to finding research to what programed instruction could do in correspondence study. At IBM, they have been using a program on the 770 computer system which is a basic introduction to the courses for field service people. They found that the program students had a 94.7% achievement as compared with an 86.9% achievement for classroom students. The programed instruction had a 27% saving in time and had much fewer flunkees as they were all crammed at the top and not spread out. Eighty-seven per cent said they liked it better than conventional instruction. They did a follow-up study to this where they sent the materials out in a field situation but this particular study was beset by problems. They found that the field group average on the test was 89% which was just about as good as they could achieve in classroom situations. These materials can be mailed out, students do them at home or off time and then he sends the materials back in. There is no grading necessary. The student does all the work for you, just send him the materials and if you want, you can test him afterwards.

Programed instruction by and large has been tried out and researched, perhaps by this time more thoroughly than any other medium, and I mean that quite literally. An awfully lot of people, of course use television. But in terms of the research that has been done on television and how it might be improved, I think in its three year history, programed instruction is going to be a very significant influence on the educational scene whether it has to do with correspondence study or in the classroom. I will make a wild prediction. I am quite convinced teachers are going to be replaced except in the military where they use the weight factor, for example, if a pilot in an airplane, weighed less than a computer, although he is not quite as reliable he would be used. I think the same thing is true about a teacher in the classroom. If we can develop materials that can do better than the teacher, then they will be used because they certainly are cheaper.

I just want to leave you with the idea that program materials are not done yet. The materials on the market are not yet the kind I am talking about in the future. It is a good idea to look into it, to investigate it, to find out what is going on, find out what is available and have an idea of what the world is going to be like, the educational world in the future.

DISCUSSION SUMMARY

Factors common to both programed learning and correspondence study are: (1) individual work, (2) student response; and (3) student can proceed at his own speed. The difference is that in programed learning the student knows immediately the correctness to his answers, while in correspondence study the student, after a period of time, may or may not find out the correctness to his answers, depending upon the alertness of the instructor.

It is believed by Dr. Klaus that programed instruction is entirely different from other types of instruction, so different that it represents a revolution and not an evolution. He also believes that any course can be programed.

Programs which are truly effective may be used to reach the entire objectives of a course. They may also be used as a part of a correspondence study course. Studies are being conducted now to determine the effectiveness of programed learning as a part or as an entire correspondence study course.

Programed materials are being used in several schools. Many programed books have been sold, but the use of programed materials is limited. The preparation of these materials is expensive, for example, it took three and one half tons of materials for a study of physics course which turned out as a failure. Many of the programed courses being developed are not available now nor will they be available for some time.

Many of the programed courses have been or are being developed to use in a machine. These machines are expensive and are too large to be considered as a part of a correspondence study course. Programed materials must not be too expensive for initial purchase and must be adaptable for mailing to individual students.

Programs can be "referenced out," meaning that the students can be directed to use other media. This makes the programs adaptable to correspondence study when other methods of learning or other media of communication can be used in conjunction with or in addition to the programed materials.

There are several types of programed learning and teaching machines; (a) programed textbooks, (b) scrambled books, (c) simple write-ins, (d) multiple choice, (e) demonstrator boards, and (f) animated devices.

Two philosophies of programed learning are in the foreground today. One by Skinner-Guthrey and the other by Crowder. Skinner's programed psychology course is being used in at least ten schools today.

Programed learning courses could be developed and used in correspondence study today only through a joint effort of two or more schools.

General Summary

LEE CAMPION

As Dr. Klaus said, we are going to be forced to summarize; so being a teacher, I would like to review quite a bit of what we have seen here. I would like to move through these slides quite rapidly as we are behind time. Let's start out with Roy Frye's cave man and say we are not very far removed from this cave man. To summarize the purpose of the conference very briefly we are trying to go beyond the printed word in an attempt to explore media and see if it can play a major part in improving correspondence courses and provide a more efficient learning situation.

This was one of the points that was brought out; from what we know about learning we do not feel we are doing as efficient a job as we should be. We began by taking a look at television. The NEA pamphlet "And TV, Too!" shows that we have a lot of teaching materials and tools and now in recent years in a little more than a decade we have television as well.

Let's examine the methods of distribution of television. We are seeing vast technological improvements in finding ways of distributing the television message which we did not have years ago: translator systems, microwave, video tape, etc. We might produce programs in television studios, in a center for the production of materials, which would go into correspondence courses or be broadcast through the television medium. We have the program known as the Midwest Project on Airborn Television Instruction (MPATI). What potential would this type of program have for correspondence courses? We mentioned some of the programs that are on the air today and the materials that are being used with these programs. The EBF physics course is an excellent example. What is significant about this program is that we find a textbook written to go along with the TV course rather than vice versa. So, it does show, somewhat, a new trend in our thinking of putting materials together especially when media is used. We talked about the need for letting television do what it can do best. The question is can we with time, staff, money, and varied resources, produce television programs that can do a unique job? This poem, which I heard Bill Harley recite at a TV meeting illustrates, what TV is often like today:

An emeritus professor from UC,
Watched a horrible program on TV,
And while he sat gazing, his eyes slowly glazing,
He shouted, "Ye Gads, that's me."

We must go beyond merely putting the camera in front of a college professor who does nothing more than what he ordinarily does in the classroom. If we have the correspondence teacher in front of the camera, let us hope he will use the unique advantages that television has to offer to give something, a new dimension, to the lesson. We have developments in terms of distribution, in terms of statewide systems and regional systems. We have NETRC a network system. I wonder if you correspondence people will take advantage of these systems of distribution to get your programs distributed in this manner?

We then moved into the projected media field and talked about the 8 mm. One of the things we talked about is the simplicity of operation of the 8 mm. We learned of the simplicity of operation. The advantages we listed and starred: endless loop for projection, the portability, and cost factors all seem to be in favor of the 8 mm. It is an ownership system. I think this was a very important point and I think the statistics given which illustrate how rapidly this field will grow are very important. When we consider that we might have, by the end of next year more 8 mm. sound projectors in our homes than we have 16 mm. projectors accumulated over several decades we are witnessing a spectacular development. These projectors in the homes have great implications for correspondence teaching.

If we take a look at what is happening to materials, we see a trend towards the "packaging." I wonder what the 8 mm. field will do to the packaging of such say for a foreign language. Publishing concerns, audio-visual producers are putting the media and the materials together as a package. Surely this has tremendous implications for correspondence study. The packages come in different forms as well. Inexpensive slides and new types of small, less costly projectors which are being sold to the home now point to "packaging" possibilities for correspondence study. Occasionally, we are finding devices being engineered not necessarily as home tools or tools for industry but for educational purposes. Some packages, including audio-visual equipment and materials, may not teach an entire course but rather a part of the course. Some producers are thinking in terms of modules as they develop their package of instruction. There are many examples of "packaged" materials now available. Although not developed specifically for correspondence study, the equipment and materials could easily be used for such a purpose.

We then discussed the concept of the Instructional Materials Center. Like the public schools, colleges are plagued with this same problem: the

IM Center has never really been given a home or a place where it can do the professional job that is needed. I would like to make one addition to what Mr. Frye said. I think that we are going to see a trend towards a center that will develop materials *for the teacher*. The teacher will design these materials and will have to know the production techniques, but as we begin to recognize how busy the teacher is, the IM Center will save the teacher time by providing production services. So, these materials will be prepared by professionals. This is what Mr. Frye meant by the sergeant in the field, and allowing the general (the teacher) time to teach. These production services will be important in the development of various packages of media and materials that go into correspondence courses. I do not think we can do it haphazardly. We will have to use the sergeant and develop these materials professionally.

I agree with Dr. Klaus that the movement in programed learning has been ushered in with more research behind it than any other educational development. Many examples of the literature that has flooded the educational field, about this area of teaching machines and programed learning are available. I believe we will see a trend toward the skinnerian of materials in programed textbook form with an additional answer pad in order that the program is not consumed. For correspondence courses, perhaps you can consume the program. I think we will see the program textbook or scrampled textbook, such as these that are on display, as a real potential for correspondence study.

We might consider, for correspondence study, programing in modules. Do we have to "program" the entire correspondence course? Perhaps some phase of the course will lend itself better to listening and viewing? We are again considering the systems approach that was mentioned here several times; the putting of media and material together in a type of system which each performs a unique job. We will have simple write-in devices probably because this device can be priced at a cost which the home market can afford to buy. There are now tin or cardboard type devices, page turners as they are often called, that are selling from about $5.00 to $20.00. It is possible to get these devices down to a price that the students can afford. Some devices use microfilm on a film strip. Graphics and pictures are possible in this type of machine. The film strip is easy to store and mail. The industry can produce devices in mass production and to get the cost down to where your correspondence students could afford it. Several of the teaching machines now available show great promise for correspondence study. The Technological Development Project has just completed a survey, Our Occasional Paper No. 3 on Teaching Machines and Programed Learning. I think you might like to see what we found out in terms of the growth of this field in such a short time. We have about forty-five devices on the market today as reported by industry. By the end of 1962, industry reports that eighty-three kinds of such devices will be available (Figure 1). You can see this rapid sharp rising curve. Somewhere along the line it will have to taper off. But it does give you an idea of what is happening in this field in terms of the machines themselves. This includes simulated machines such as the program textbook type. Those that are labeled 1961 are complete now and those that are labeled 1962, industry reports will be available by the end of 1962. Figure 2 shows the development of programs. By the end of 1962, possibly 630 programs will be available. That does show an increasing emphasis on development of programs and not just devices. After all, it is the program that teaches and not the devices.

Here is a list of the companies now preparing programs (Figure 4). It shows the types of programs they are preparing and the forms in which the programs are being prepared. This book is available for $1.50. You can write to Publication-Sales at the NEA if you are interested in a copy. There are pictures of all the devices that industry reported to us, some ninety pictures including a brief description. Surely this field offers much for correspondence study.

As pointed out by several of the speakers, we have seen or would like to see developed, the systems concept of finding the unique contribution of each of these various media and materials. Then package them together into a system of instruction in which each does the best job. Only after we are aware of all the available tools for teaching and employ them systematically to instruction will we arrive at the full potential for instructional communication.

A Look to the Future

ERNEST O. MELBY

It had not occurred to me this morning that Bob would lay bare his own history to quite this degree. I do want to say something this morning about creativity and I think that Bob is himself a wonderful example in this area. You know, Bob, just to enhance your own self image, I suggest you read an article in *The Saturday Review*, "What Makes a Person Creative." It is by Donald W. MacKinnon of the University of California at Berkeley. Evidently they spent a very considerable sum of money and much effort trying to find out what it is that makes a person creative. All told, over 600 persons in various creative fields; science, philosophy, writing, painting, music, architecture, etc. were studied. I think everyone in education should read this article. A reading of this article, really thinking about it and basing one's whole efforts on the results might well reorient American Education, and education for that matter all over the world, but particularly in free societies.

There are great passages that I would like to read to you because I do not think I could express the ideas and results as well as Mr. MacKinnon does. I know it is very boresome to listen to anybody read and I am only going to pick out a single paragraph which is the summary paragraph. Before I do that I would like to point out that this group at Berkeley found that the correlation between scores on the intelligence tests and creativity in several groups was about zero. So, if you have a child or a student and he insists on coming up with new ideas in one thing or another, but he does not do very well in the regular subjects, do not give him up. You may have a creative genius on your hands, not necessarily, but you may have. Mr. MacKinnon seeks to summarize this, and it is a tough job because ther eare a lot of data and implications. He says, "In so brief a report, emphasis has to be placed upon the generality of research findings. What needs to be equally emphasized is that there are many paths along which persons travel toward the full development and expression of their creative potential and there is no single mold into which all who are creative will fit."* This ought to sound good to people in correspondence study, because if there is any group of people that is dealing with various and sundry backgrounds and experiences, the people in correspondence study certainly constitute such a group.

"The full and complete picturing of the creative person will require many images but, if despite this caution, one still insists on asking what most generally characterizes the creative individual as he has revealed himself in the Berkeley studies, it is his high level of effective intelligence, (put the accent here on this word effective, effective intelligence. Lots of people have a high intelligence but it is not very effective) his openness to experience, his freedom from crippling restraints and impoverishing inhibitions, his aesthetic sensitivity, his cognative flexibility, his independence in thought and action, his high level of creative energy, his unquestioning commitment to creative endeavor, and his unceasing striving for solutions to the evermore difficult problems that he constantly sets for himself."* Mr. MacKinnon points out that in his view, the creative people are the people in our society who in their education have developed themselves to the fullest possible extent in terms of their own uniqueness as persons. In other words, they are the people who more than the ordinary run of people have become what they are capable of becoming.

We have gone through a long history in education and I have worked through roughly a half century of it myself. In that fifty year period, we have talked a lot about progressive education. Though we have had a lot of sharp differences and seen many movements of one kind or another come and go, I submit that if democracy has any meaning, if a free society has any enduring meaning, this meaning lies more in the area of education than anywhere else. Education is really the core of all the freedom we talk about. We speak of economic freedom and this may make us rich or at least comfortable. We talk about political freedom and we prize this especially when we look at the Russians and note that they do not have it. We extol social freedom and mobility where people like myself, a youngster on an obscure farm in Minnesota can get to be a teacher in the University. This surely was unthinkable in my father's days in Norway. Had I been born over there, I would have never gotten to high school, much less to college. This is wonderful but the biggest thing of all, the greatest freedom of all, is educational freedom. This is the freedom, the opportunity of the individual to become all that he is capable of becoming. I would like to say that educational freedom is at one and the same time the foundation and flower of a free society. This is the one condition without which the ultimate triumph of freedom is doubtful. With the right kind of creative education a free society can really flower.

---

* Donald W. MacKinnon, "What Makes a Person Creative?," *The Saturday Review*, February 10, 1962, p. 15.

We are living through a period in our history when not only we who do the teaching but the American people as a whole are badly confused. We are probably living through a period when we have more confusion and false voices than we have heard at any time in our history as a people. We have been rocked, we are frightened, we have lost our bearings, we have been misled by false prophets and the average person who is not an expert in education hears so many conflicting voices that he has trouble making up his mind. He is often throwing up his hands in despair though nothing can be done. He feels he cannot trust anybody.

We are living at a time when mere quantitative questions in education are really no longer primary. Lots of people, including those with whom I grew up, had the idea that all education was good. My father used to say, "A little more schooling would never do anybody any harm." The theory was that a little schooling was good, more was better. It was intrinsically good. We know now that education can serve evil purposes quite as easily as it can serve a free society. Hitler, Stalin, and Mussolini all proved that education is not intrinsically moral, or intrinsically good, or intrinsically ethical, anyway you want to say it. It is a process that can be made to serve all sorts of purposes. The most discouraging commentary I could make on the period in which we are living and our likelihood of coming out into the sunshine of victory, is that the leadership of our country with some exceptions is not interested. I suppose Congress is going to turn thumbs down on some active Federal subsidization in education. I do not know what else in these directions, it will come about because we are blind to the nature of the world we are living in. I think I have perhaps little better basis for saying that than some people because I live in Michigan.

What we have witnessed in our Michigan legislature in the last few years is almost unbelievable. I might point out one thing in this relationship. The vast majority, nearly two thirds of the nation's people, live in some kind of urban situation. They have a better chance to know what is going on and to sense the kind of world they are in. But our legislative bodies, particularly our legislatures and the House of Representatives in the Congress, are controlled more by the rural people. Somebody in Michigan said the other day that pigs have better representation than human beings in many counties in Michigan. This one thing alone may well defeat the international scene. A crucial problem is to get the people in certain areas of our country to look at the nature of the world in which they are living and in time, I emphasize the *in time*, because it is later than we think.

We have to think today about education in its totality. When Bob wrote me about coming down here and meeting with some people in correspondence study, I wondered whether I ought to say no, because I do not really know very much about correspondence study. Everybody in this room knows more about it than I do. But on second thought it occurred to me that maybe it is important in every specialized area to stress the generalized education problems. What I feel around me in the university where I work, is something like this. Today it is very dangerous to think about education in terms of techniques alone, or in terms of a single subject alone, or in terms of our profession alone. In short, it is dangerous to think about education in a fragmented way. It seems to me that it is high time that we began to see the centrality of education in the kind of period in which we are living. Here is a curious paradox, the very people who deny us the means with which to carry on the kind of education we need are the people who daily dump more jobs at our door!

If you talk to people about the race problem they say the only answer is education. You cannot do it with a Supreme Court decision alone, it must come through education. Speak of world peace, the answer is education; so with divorce, juvenile delinquency, and every other serious problem. If a problem appears insoluble today, that problem is dumped at the door of education; and yet the very people who do that are the people who shut the door to the resources that we need to do these jobs. If you need any more evidence of the partiality of our thinking and the unformed basics of the way we face our problems here, you have wonderful examples. We who are in the educational profession are in error too, because we tend to think of this problem in largely quantitative terms. We have prided ourselves in recent years on the fact that we have more and more people graduating from high school, more and more people graduating from college and we cite all these figures. We talk about the economic returns of education and point out how much college graduates earn and all this kind of thing. Now what are we thinking about? I can remember the day when, and I speak of it because I was a university president of a kind at one time, I had to go to the legislature and get money. So, what did I find people saying? They said, "Well, you gotta wait till you have our graduates in the legislature and then everything is going to be all right." This is where we are in Michigan today and we have more trouble than we ever had. As a matter of fact, one of our faculty members has made a study of the attitude of the members of the legislature towards education. He did this in seven states and he finds that the members of state legislatures in these seven states that are college graduates are less sympathetic to education than the ones that are not college graduates. It, therefore, appears that the more education you have, the less you believe in education at least for other people.

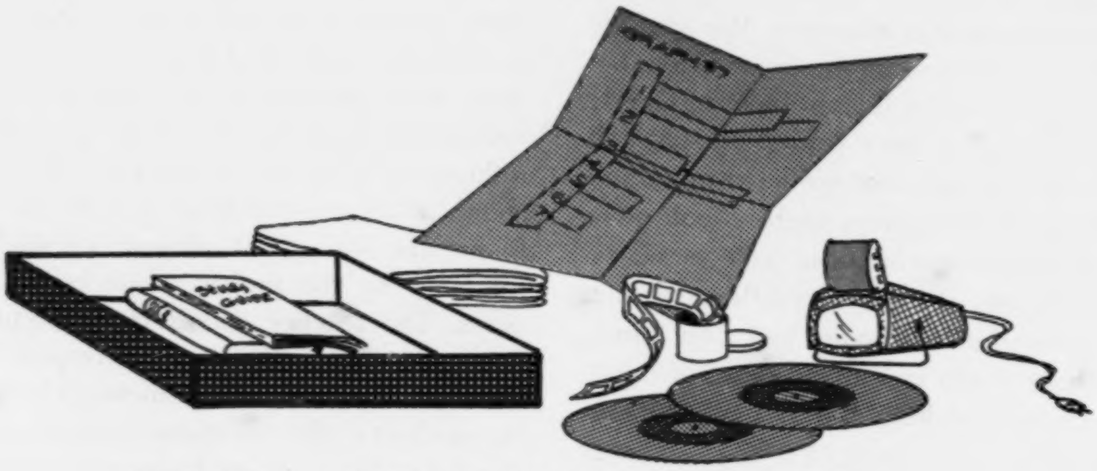
In Nebraska, the University of Nebraska has been experimenting with community studies with a little help from the Carnegie Corporation. They are working in four communities. In one of these communities, 60% of the people twenty-one years of age and over are either high school or college graduates. That is a very high level of education. Yet this is the community where they had the most trouble, the least sense of civic responsibility, the least willingness to cooperate with other people and to assume responsibilities for community functions. I think, if you begin to look for it, there is an overwhelming amount of evidence that suggests that the theory I wrote in my copybook as a rural school child, over and over again, "Knowledge is power," is not true. Knowledge may be power but it is not inevitably or intrinsically power for good.

I should mention one thing. We have a good many studies of the effect of a college education on the value systems of boys and girls. The results show little influence by the college on the value systems of students. But some professors really influence the values of students. Every student should take a course from at least one such professor who has a great influence on students. This influence by the professor can come in several ways. The teacher makes the student feel important. He gains the student's respect. He opens the student's minds, and sometimes by rephrasing the student's silly questions to make them sound good. The thing we are finding in education more than in other fields is that effectiveness of teaching is a personal phenomenon, that teaching is a creative endeavor, that the teacher is in reality an artist. We should have some interest in *what* we do and some interest in *how* we do it, but the most important consideration is; *who* does it. The teacher is always an artist, not a scientist. The more science a teacher has at his disposal the greater artist he must be.

What is now happening in education has already happened in medicine. The doctor must go back to learn about new developments in medicine so the teacher must go back and learn of new developments in education.

We, the American people, especially the teachers, must take a whole new look at education. We must begin with a look at the dignity of each human being and develop respect for each individual. We must not be satisfied just because a student get an "A." We must search for creativity in students and foster this creativeness. A characteristic of creative persons is that they are less inhibited, have less restraint, and have less restraint in talking about themselves.

Teachers have been creating students in their own image. What would happen if teachers started creating students in the student's image? Contributions of audio-visual education open doors to creativeness. We let the mass of students with creative ability go past us without using this great potential. We as teachers must remember that any person can learn anything that he sees a reason for learning.



STUDY KITS CAN BE VARIED__

Guidelines to the Use of Newer Media in Correspondence Study

After receiving the summaries of the several conference discussion groups on the use of the newer media in communications in correspondence study, we submit the following report.

Broadcast Media

We believe that:

1. Broadcast media and correspondence study, in judicious combination, can bring individualized instruction to a mass audience.
2. Broadcast media offer to correspondence study not only the intrinsic advantages of sight and sound, but they also provide an additional measure of pacing, discipline, and motivation.
3. Correspondence study offers to broadcast media an opportunity to provide for individual differences, an avenue for two-way communication betweent student and teacher, a means for direction of a total learning experience, and a procedure for student reaction.
4. The combination of broadcast media and correspondence study should not be a mere coupling of two methods of teaching, but through experimental development and integration should result in a completely new instructional procedure.

We propose that:

1. Reconsideration be given to the 1959 research proposal of the Committee on Radio and Television of the Division of Correspondence Study on "The Function of Two-Way Communication in Learning."
2. A research study be designed which will determine the contributions of selected resource materials, such as graphics, slides, filmstrips, and programmed instruction, when used by the student in conjunction with television and correspondence study.
3. A research study be designed which will determine the contributions of selected resources materials, such as graphics, slides, filmstrips, and programmed instruction, when used by the student in conjunction with radio and correspondence study.
4. A research study be designed which will compare the relative effectiveness of combining correspondence study with radio and with television in teaching the same course.
5. A research study be designed which will determine the optimum frequency and duration of broadcast and the optimum frequency and type of correspondence student response desirable in this combined method of teaching.
6. A research study be designed in which broadcast media and correspondence study are employed as a single vehicle for continuing study on the part of the participant in short courses, conferences, and workshops.

We suggest that:

1. Correspondence study directors be alert to the potential in Great Plains Television Distribution Center which will facilitate the exchange of telecourses.
2. Correspondence study directors be alert to the potential present in the increased coverage which can be attained through the development of educational television networks.
3. Correspondence study directors be alert to explore the possibilities of such new equipment as videotape playback for television sets.
4. Future planning of the combination of broadcast media and correspondence study be a broadened viewpoint which will encourage the emergence of a new instructional procedure, create new dimensions in learning, permit the teaching of new subject areas, extend instructional services, and open new educational horizons to the many publics.
5. The Division of Correspondence Study of the National University Extension Association take a more active role in the formation and utilization of

national telecourses, with a view of coordinating these courses more successfully than has been done in the past.

We recommend:

1. The continuation of the working relationships now established between the correspondence study and the audiovisual personnel.

2. The cross-fertilization of ideas through the exchange of information, materials, and professional publications.

3. The planning and implementation of a media conference for correspondence teachers and course writers.

4. The design and conduct of research projects through the joint efforts of the Division of Correspondence Study and the Division of Audio-Visual Communications, National University Extension Association, along with the cooperation of member institutions.

5. That correspondence study directors consider that an audio-visual specialist work with course writers in somewhat the same manner as course editors now work with faculty.

Projected Media

We recommend that:

1. Effort should be made to provide for the use of projected media when such use will secure better results than any other method.

2. Correspondence study directors should explore the potentialities of such devices and materials as 3-dimensional projected materials, 8 mmfilms, viewers, projectors, etc.

3. One criterion for the selection of projected material should be the appropriateness of non-verbal response. Research should be considered to compare verbal and non-verbal responses.

4. One criterion for the selection of projected materials should be the presence of a specific teaching purpose, such as motivation, conceptualization, the transformational process, etc. Production should be based on the recognition of the peculiar capabilities of various projected media with respect to a specific teaching purpose.

5. One criterion for the selection of projected materials should be the availability to the student of the required equipment.

We suggest that:

1. Projected materials be produced which are easily adaptable to presentation in foreign languages, since correspondence study often deals with foreign students. Materials produced should center on principles rather than applications.

2. An on-going project should be undertaken to provide lists and catalogs of materials for both audio-visual and correspondence study personnel. These materials should be in a form easily excerpted for presentation to a teacher who is preparing a course in correspondence study and for presentation to students who live in areas where there is a high availability of materials and equipment.

3. An on-going project should be maintained to provide equipment designers and suppliers with information concerning the special needs for correspondence study.

4. Correspondence study directors should make surveys to locate equipment available and appropriate for use in correspondence study. A national compilation should be arranged and kept up to date.

Audio Media

We recommend that:

1. A correspondence study recordings library be established which would consist of recordings in various subject areas by outstanding teachers from various universities. Duplications could be made from this library for distribution to correspondence students.

2. Sound recordings be developed to accompany new projected aids.

3. A project be initiated to determine the feasibility of including sound recordings along with the printed word in all areas of correspondence study.

4. A project be initiated to undertake the development of types of audio equipment that may be of particular use in correspondence study. For example, a small size, low cost, battery-operated, transistorized recording and playback device might be developed to provide two-way communication between instructor and student.

Graphics and Manipulated Media

We recommend that:

1. Each institution use whatever means it has for producing attractive high quality course manuals or course syllabi. In addition, we believe that there should be an effort to use other graphic materials which are available from national and local sources.

2. A survey of correspondence bureaus be conducted to discover the courses in which manipulated media and graphics are currently being used, a brief description of the material, the source, the cost, and, if the material has been produced locally, its availability to other institutions.

3. Use be made of the Educational Media Council Directory and a supplement be prepared if this seems desirable. This supplement might include sources of such illustrative material as pictures, maps, charts, and art reprints from such periodicals as *Life, Ideals,* and *National Geographic.* These sources might also include textbook or encyclopedia materials such as overlays of human circulatory systems, diagrams of

atomic reactors, frog anatomy, etc., which appear in some current publications. Only material available from publishers would be reported, along with approximate cost.

4. Any seminars or in-service training meetings for course writers should include displays and explanations of graphic materials, with suggestions for their incorporation.

5. The course writer should be encouraged to develop the creativity of the student by providing opportunities for the student to summarize and apply information through forms other than the written word.

We believe that:

1. Graphic and manipulated material should be used wherever they express concepts more clearly and efficiently than do other media.

2. Graphic and manipulated material should be used wherever they offer opportunities for students to express themselves in a creative manner.

Programed Learning

We believe that:

1. The programmed learning concepts are admirably suited to meet some of the fundamental problems of correspondence study and will ultimately make a significant contribution to correspondence teaching. This is not to infer that programmed materials will become the sole medium of correspondence teaching.

2. Programmed learning must be used when an analysis of the teaching problem reveals that the programmed learning method will make the most efficient and effective contribution to teaching.

3. Programmed learning is to be regarded as a process in which concept formation is to be achieved through a rigorous ordering of relevant information which is symbolically expressed through those sensory media which make possible the most effective learning response.

We propose that:

1. Since valid research thus far completed seems to lend support to the validity of programmed learning as a teaching medium, the newness of this medium in regard to correspondence teaching will require these specific research objectives: research leading to the creation of specific kinds of programs, effective principles of utilization, and the comparing of the success of the programmed learning design to the success achieved through the use of procedure now current.

We suggest that:

1. First hand information be secured regarding principles, practices, research, and existing programmed study material.

2. Campus personnel be informed and involved in participation in an information and study program leading to ultimate decisions regarding the utilization of programmed learning methods.

3. The officers of the correspondence study and audio-visual divisions of the National University Extension Association continue to stimulate interest in programmed learning and provide inter- and intra-organizational communication to the end that the unique contribution which programmed learning can make to correspondence teaching will be realized.

Committee Postscript

The planning and executive committee is proud and happy to have had the opportunity of bringing together these two groups of educators. Although we felt there was a great need for this type of meeting, we approached the conference with some doubts, primarily because of the one question: "Would the members of each group attempt to dominate the conference with the importance of their specific educational media?"

The answer to this question came as one of the highlights of the conference. Everyone arrived with an open mind, a willingness to learn, and a desire to impart knowledge and information which would be beneficial to others. There was no attempt by a group or by any individual to dominate any part of the conference.

A second important outcome of this conference was the relationship which developed between the two groups. Many people were complete strangers to members of the other group, although they were known by members of the group in which they belonged, either correspondence study or audio-visual. In one or two instances the audio-visual and correspondence study personnel from the same school became personally acquainted for the first time at this conference. By the end of the conference there were no strangers. Audio-visual media and correspondence study were familiar areas to all concerned.

Following the conference many letters were received from conferees who were very complimentary in their remarks. Extracts from a few letters follow:

". . . I found the sessions to be very interesting and stimulating. Everyone seemed vitally interested in the topic and willing to participate in the work sessions. The group was most congenial and well-selected for such a project. . . .

. . . The committee is to be congratulated on the administration of the program and the efficiency with which all operations were carried out. I thoroughly enjoyed the association with other specialists in the field and feel that the experience gained at the Correspondence-Audio-Visual Conference will be most valuable. . . .

. . . I don't know that I ever attended a conference that was more to the point and more tightly organized than the one that you conducted. It was certainly a splendid learning experience and furnished so many ideas that I think it is going to be some time before we can accomplish all the things that this conference stimulated. We were both equally impressed and between the two of us our correspondence study activity is going to have to show some changes. My sincere congratulations to you for having provided us with a remarkedly fine opportunity to give thought to our correspondence study possibilities. . . .

. . . Certainly the members of your planning committee and staff should feel proud of the accomplishment of this high level conference. . . .

. . . Congratulations on a great job. That was one of the most worthwhile conferences I have ever attended. I hope that others feel like I do about it. . . .

. . . We all felt that this was one of the most fruitful conferences we have attended in a long time since everything was oriented toward doing something about better coordination of our audio-visual services and correspondence instruction. Any criticism I heard was a left handed compliment to the Planning Committee since most people felt that there was so much valuable information we just didn't have time to take in as much of it as we would have liked to have had the opportunity to absorb. This is a real tribute to the conference Planning Committee since we spent nearly a week discussing the practical applications of the newer media, and this was a longer period than we usually have at most conferences of this type. I just hope that our 'doing can catch up with our knowing' and that we can all have better cooperation between our two agencies at our own institutions. . . ."

The committee expresses its thanks to the U. S. Office of Education for making this meeting possible. We feel that this opens a new era in the use of newer media in correspondence study.

THE PLANNING AND EXECUTIVE COMMITTEE

APPENDIX

Planning and Executive Committee and Group Chairmen

L. E. McDonald, *Chairman*

Planning and Executive Committee;
Assistant Director for Correspondence
Extension Teaching and Field Service Bureau
201 Extension Building
The University of Texas
Austin 12, Texas

Group A

Robert E. de Kieffer, *Director*

Bureau of Audio-Visual Instruction
University of Colorado
Boulder, Colorado

Charles A. Wedemeyer, *Director*

Correspondence Study
110 Extension Building
University of Wisconsin
Madison 6, Wisconsin

Group B

Gayle B. Childs, *Head*

Class and Correspondence Instruction
University of Nebraska
Lincoln, Nebraska

Lee W. Cochran, *Director*

Bureau of Audio-Visual Instruction
University of Iowa
Iowa City, Iowa

Group C

John D. Alford, *Director*

Audio-Visual Education
University of Wyoming
Laramie, Wyoming

Ernest Fred Tiemann, *Director*

Visual Instruction Bureau
Extension Building 101
The University of Texas
Austin 12, Texas

Group D

Neil F. Garvey, *Director*

Correspondence Study;
Associate Professor of Political Science
University of Illinois
Champaign, Illinois

Robert M. Reed

Production Manager, WHA-TV
University of Wisconsin
Madison, Wisconsin

Consultants and Panel Members

Broadcast Media

F. LLOYD HANSEN, *Director*
Correspondence Study Department;
Associate Professor
University of Minnesota
Minneapolis 14, Minnesota

KENNETH D. WRIGHT, *Director*
Broadcasting Services
Division of University Extension
The University of Tennessee
14 Ayres Hall
Knoxville, Tennessee

Audio Media

L. R. LINDEMAN, *Chairman*
Department of Audio-Visual Communications
Brigham Young University
Provo, Utah

NORINNE TEMPEST, *Supervisor*
University of Utah
109 Annex-Extension Division
Salt Lake City 12, Utah

Projected Media

ELIZABETH POWELL, *Supervisor*
Home Study
Georgia Center for Continuing Education
University of Georgia
Athens, Georgia

ROBERT E. STEPP, *Supervisor*
Bureau of Audio-Visual Instruction
University of Nebraska
Lincoln 8, Nebraska

Graphics and Manipulated Media

KENNETH M. MCINTYRE, *Director*
Audio-Visual Education
University of North Carolina
Chapel Hill, North Carolina

ALICE ROWBOTHAM (MRS.), *Head*
Correspondence Instruction
University Extension
University of California
Berkeley 4, California

Programed Learning

BENJAMIN F. HOLLAND
Associate Professor of Educational Psychology
The University of Texas
Austin 12, Texas

Participants

Lois R. Badger (Mrs.), Director
Correspondence Study
University of Colorado
Boulder, Colorado

C. W. Ballew, Assistant Director
Division of Continuing Education
(Visual Education)
University of Missouri
Columbia, Missouri

Vassor Bishop, Director
Correspondence Study
University Extension
University of Mississippi
University, Mississippi

Thomas H. Boardman, Supervisor
Audio-Visual Aids Service
University of Illinois
Urbana, Illinois

I. C. Boerlin, Supervisor
Audio-Visual Aids Library
106 Library
Pennsylvania State University
University Park, Pennsylvania

Val Borger
University Extension Division
University of Wisconsin
Madison 6, Wisconsin

W. Donald Brumbaugh, Director
Audio-Visual Bureau
University of Utah
114 Spencer Hall
Salt Lake City 12, Utah

Lida M. Cochran (Mrs.), Instructor
College of Education
State University of Iowa
Iowa City, Iowa

Alvin B. Cogdill
Visual Instruction Bureau
Box 8032
University Station
The University of Texas
Austin 12, Texas

George Lee Crutcher, Head
Department of Audio-Visual Instruction
Extension Division
University of Florida
Gainesville, Florida

R. L. Davidson
Division of Extension
Texas Technological College
Lubbock, Texas

Renee F. Erdos, Supervisor
Correspondence Courses
Officer in Charge of Correspondence
Teaching Division
New South Wales Department of Technical Education
Sydney, New South Wales
Australia

Gerald E. Faye
Extension Division
University of Michigan
Ann Arbor, Michigan

Jack Fuller
Department of Correspondence Study
University of Washington
Seattle 5, Washingon

Charles Hartsell, Director
Correspondence Study
University of Tennessee
Knoxville, Tennessee

Donald Hathaway, Executive Director
Hadley School for the Blind
Winnetka, Illinois

Ralph Henderson
Minnesota Mining and Manufacturing Co.
2121 Santa Anna Avenue
Dallas 28, Texas

Mary Henry, Head
Bureau of Correspondence Instruction
Division of Extension
University of North Carolina
Chapel Hill, North Carolina

Norris Hiett, Associate Dean
Division of Extension
The University of Texas
Austin 12, Texas

Betty Hudman (Mrs.), Instructor
High School Correspondence Courses
Extension Teaching and Feld Service
Bureau
The University of Texas
Austin 12, Texas

Gene S. Jacobsen
Division of Home Study
Utah State University
Logan, Utah

Charles H. Koelling
Division of Extension
120 Whitten Hall
University of Missouri
Columbia, Missouri

Arthur S. Krival
Room 110
Extension Division
The University of Wisconsin
Madison 6, Wisconsin

J. L. Kunkel, Supervisor
Audio-Visual Services
University Extension Division
The University of Nebraska
Lincoln 8, Nebraska

Burnell Lamb
Audio-Visual Education
University of Wyoming
Laramie, Wyoming

L. C. Larson, Associate Dean
Director of Audio-Visual Center
Indiana University
Bloomington, Indiana

John J. Long, Coordinating Director
Educational Materials Services
The University of Oklahoma
Norman, Oklahoma

Gladys McGaugh (Mrs.)
Assistant in Charge Correspondence Study
Continuing Education
Oklahoma State University
Stillwater, Oklahoma

J. H. Millikin
Director of Extension
Texas Technological College
Lubbock, Texas

Fred J. C. Mundt
Assistant to the Director
Visual Instruction Bureau
The University of Texas
Austin 12, Texas

A. C. Murphy, Director
Extension Teaching and Field Service Bureau
201 Extension Building
The University of Texas
Austin 12, Texas

Russell R. Myers, Director
Correspondence Study
The University of Oklahoma
Norman, Oklahoma

Robert V. Noble, Head
Home Study Department
University of Florida
Gainesville, Florida

Virginia C. Patterson
Visual Instruction Bureau
The University of Texas
Austin 12, Texas

Guy M. Pritchard, Head
Audio-Visual Center
Oklahoma State University
Stillwater, Oklahoma

Richard Quinlan, Supervisor
Motion Picture Production
Division of Extension
The University of Texas
Austin 12, Texas

Louise Rogers, Director
Correspondence Study
Division of University Extension
Indiana University
Bloomington, Indiana

Hazen J. Schumacher, Jr.
Broadcasting Service Television
The University of Michigan
Ann Arbor, Michigan

Claudine Shannon
TV Coordinator and Executive
University Extension Division
University of Wisconsin
Madison 6, Wisconsin

Douglas Sjogren, Supervisor
Correspondence Course Development
University Extension Division
The University of Nebraska
Lincoln 8, Nebraska

Sid Smith (Mrs.)
Professional Information Division
The Hogg Foundation for Mental Health
The University of Texas
Austin 12, Texas

Eloise Snavely
Instructional Services
University of Iowa
Iowa City, Iowa

Oscar F. Spencer, Supervisor
Correspondence Instruction
Pennsylvania State University
304 McAllister Hall
University Park, Pennsylvania

Ben E. Weber, Sales Engineer
Magnetic Products Division
Minnesota Mining and Manufacturing Company
2121 Santa Anna Avenue
Dallas 28, Texas

Erwin C. Welke, Director
Audio-Visual Education
University of Minnesota
Minneapolis 14, Minnesota

L. Clinton West, Director
Wisconsin AV/TV Project
University of Wisconsin
Madison 6, Wisconsin

F. A. White
University Extension Division
University of Wisconsin
Madison 6, Wisconsin

Sidney Williams
Associate Professor
Texas Christian University
Fort Worth, Texas